Journal

of the AMERICAN PHARMACEUTICAL ASSOCIATION

FEBRUARY
1959

20 # 2

Practical Pharmacy Edition

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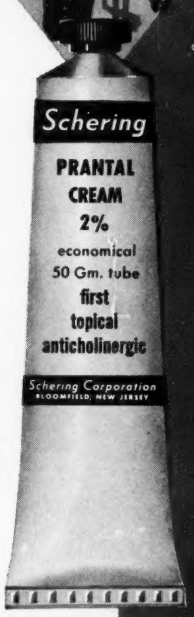

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Journal
of the **AMERICAN PHARMACEUTICAL ASSOCIATION**

Practical Pharmacy Edition

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American Pharmaceutical Association

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This Journal is the official monthly publication of the AMERICAN PHARMACEUTICAL ASSOCIATION, dedicated to the elevation and unification of the profession of Pharmacy through communication of authoritative scientific, professional, and cultural information. It is devoted to the education of pharmaceutical practitioners, and it functions as the professional voice of Pharmacy, which is directed to all members of the profession of Pharmacy in education, government, industry, and professional practice.

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Persons with heart and blood vessel disease should obtain vaccinations against influenza, according to a recommendation released jointly by Drs. Leroy E. Burney, Surgeon General of the Public Health Service, and Francis L. Chamberlain, President of the American Heart Association.

The application to human beings of the genetic principles used in the development of superior hybrids has been suggested, at a public forum of Resources for the Future at the Smithsonian Institution, by former Vice President Henry A. Wallace who made a fortune applying the science of genetics to hybrid corn.

Government economists see 1959 as the best year ever with sales and output soaring to new high peaks, incomes growing, living standards moving higher, and unemployment declining.

The millions of dollars now being poured into questionable TV advertising of drug products could be much more profitably spent by underwriting television programs which would educate the public on health matters.

Much of the success of recent physical advances such as jet air passenger transportation, rockets beyond the moon, exploration by satellites, and atomic submarine voyages can result in greater human achievements only as rapidly as advances in Pharmacy and Medicine will enable human beings to withstand the tremendous stresses of the new environments encountered.

Now 230 stations of the National Air Sampling Network constantly collect, measure, and identify air contaminants in every major population center in this country where 50% of the population of 175,000,000 is compressed into 174 metropolitan areas.

Only about 8% of America's scientists and engineers are women, in contrast to 33% of Russia's. Some 50% of Russia's engineering students are women. Female brainpower is believed to be our most valuable untapped natural resource.

"We know that cancer-producing agents are in the air we breathe. Cancers can be produced in animals using concentrates of urban smog. We know that lung cancer death rates in the largest cities are twice as high as those in nonurban areas. The case has not yet been proved, but the weight of circumstantial evidence grows heavier as research progresses," recently said Surgeon General Leroy E. Burney of the U.S. Public Health Service.

Hundreds of children and young adults will spend the balance of their lives in wheel chairs or on crutches encumbered with heavy steel braces because they did not take advantage of the Salk vaccine last winter and early spring. Some 50,000,000 who should have the protection are still without it.

Last Minute News

Johnson & Johnson have acquired McNeil Laboratories in exchange for J&J common stock according to Robert Wood Johnson, Chairman of J&J, and Robert L. McNeil, Jr. and Henry S. McNeil, Chairman and President, respectively, of McNeil.

A central world registry for the incidence of skin diseases and a compilation of the most effective treatments available for these diseases is being considered.

Hypnotism could be used successfully instead of anesthetics in 50% of the cases of patients about to undergo surgery, according to Dr. Kenneth D. Keele, Yale School of Medicine, and hypnosis may help you if you have a skin disease, according to Dr. Michael J. Scott, University of Washington, Seattle.

Chlorpromazine has been shown to be more potent as a deep sleep producer than secobarbital, reports Dr. Conan H. Kornetsky of the National Institute of Mental Health, Bethesda, Md.

Scientists now recommend that no human female receive pelvic X-rays for either diagnosis or therapy at any time after 9 days from the onset of regular menstruation because even at low levels of exposure embryo death and abnormal individuals can result from X-irradiation during the early embryonic stages. In recent experiments with the mouse, the lethal maximum with the fertilized but uncleaved egg was reached 12 hours after conception.

The world's first hospital to offer primarily drug therapy for the mentally ill will open its doors in February as the Haiti Psychiatric Institute at Port-au-Prince, with a potential patient total in Haiti of 6,000 to 9,000.

Levels of radioactive strontium-90 in milk have shown increases at 8 out of 10 sampling stations across the country, with the highest count at St. Louis, according to a recent report from the Public Health Service.

Although Americans who believe that fluoridated water is beneficial outnumber those who do not by three to one, only one out of every three using public water supplies is provided with fluoridated water, according to Dr. Donald J. Galagan, U.S. Public Health Service.

Men are more successful than women in achieving weight loss, according to Dr. Albert Stunkard, psychiatrist at the University of Pennsylvania School of Medicine.

Only 2% of the babies born today are potential geniuses, and half of these are girls who might be tomorrow's top flight scientists, according to Mrs. Ethaline Cortelyou, Armour Research Foundation.

Of the more than 1,000,000 Korean veterans who have gone to college under the GI program, most of them have selected business administration, engineering, and teaching as the three top choices.

Dr. Henry H. Armsby of the U.S. Office of Education predicts that 423,500 college students will win bachelor diplomas in 1959, with 39,500 of these in engineering, 18,000 in biological sciences, 17,200 in physical sciences, and 7,800 in mathematics. About 14,000 master's and 3,900 doctor's degrees will be granted in these fields also, as the upward trend continues.

More than 400,000 of the 600,000 Korean veterans now in training are in the Nation's colleges and universities where they make up one out of every 6 males receiving a higher education.

The annual death rate as a direct result of accidental poisoning in the United States averages 1,600 youngsters under 14 years of age, with the actual number of cases treated each year numbering 100 to 400 times this total.

The U.S. Public Health Service has utilized the recent smog episodes in Los Angeles, a recurring problem there in recent years, to obtain considerable data on air pollution control.

Contributions to the 1958 Heart Fund reached a record total of $22,345,718.

Through Easter Seal contributions, 246,562 crippled children and adults were cared for and treated during 1958.

Dr. George W. Beadle, geneticist and 1958 Nobel Prize winner in medicine and physiology, says the day may come when individuals will no longer have the right to determine how many children they will bear.

The Social Security Administration in Washington, D.C. is adding nearly 3,000 more Civil Service employees to its staff to handle the increased work load created under the 1958 Social Security Amendments which make monthly payments available for the first time to an estimated 400,000 persons.

A recent study indicates that 4,000,000 persons in the United States use contact lens.

The increasing cost of modern medical care is largely due to (1) an increase in the annual number of patient days in U.S. hospitals, (2) a large increase in the number of births in hospitals, (3) an increase in the annual average of out-of-hospital doctor visits, and (4) an increase in the proportion of persons seeing a physician at least once a year.

The National Health Council, with its 64 national agency members, will meet in Chicago next month, March 17–19, to focus nation-wide attention on occupational health problems and needs.

Federal funds for scientific research and development during the fiscal year ending June 30, 1959 are now estimated to amount to $4,800,000,000.

The National Office of Vital Statistics reports that about 4,248,000 babies were born in 1958, a decline of 1% from the record high set in 1957.

Dr. Harold Aaron of Consumers Union will be editor of the new 4-page biweekly publication which will evaluate drug products for physicians, entitled *The Medical Letter.*

Evidence of vegetation and therefore at least one form of life has been found on Mars, according to Dr. William M. Sinton, Lowell Observatory, Flagstaff, Arizona.

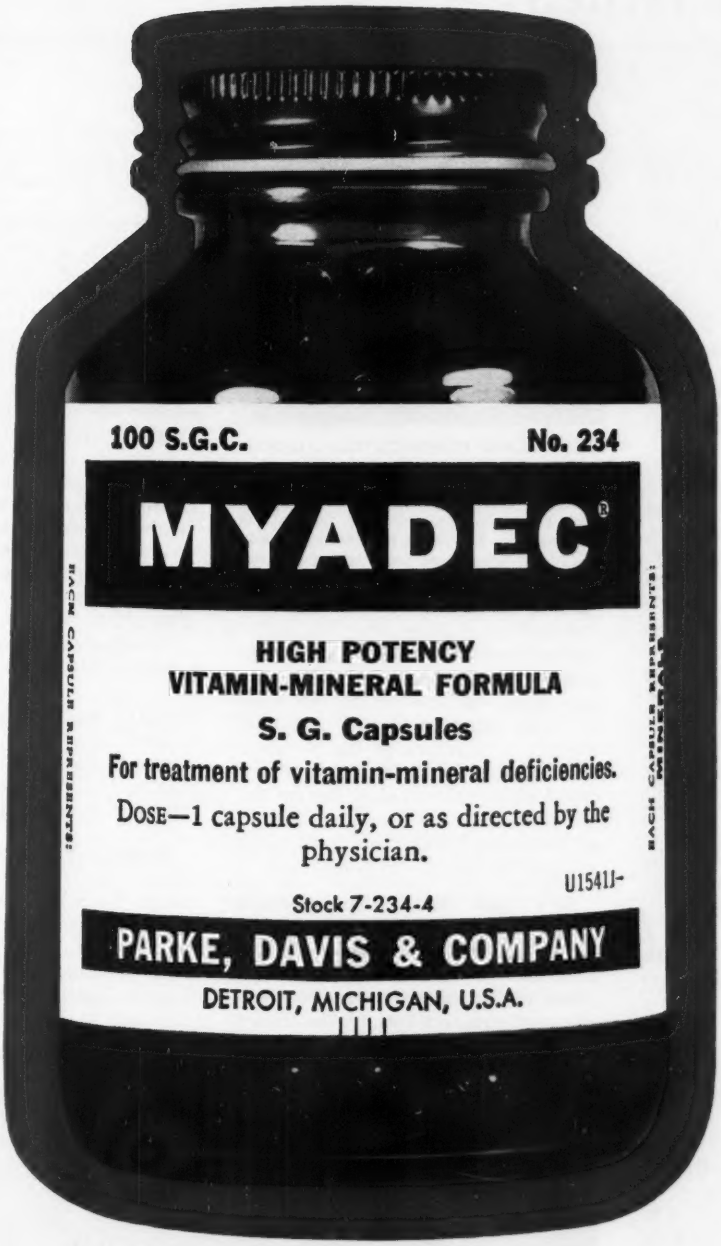
Veterans in civil life now total more than 22,700,000, with an average daily patient load in hospitals of 114,500, and outpatients totaling more than 166,000.

With Russia graduating 16,000 physicians each year, while the U.S. graduates only 7,000, Russia now has 25% more physicians per person than the U.S.

The District of Columbia Medical Society is trying to bring order to the pricing of medical care by basing on a unit charge the amount each physician charges for a routine office call. Thus, if an office call is $5, an appendectomy might cost $150 (30 times the base figure).

In addition to Sen. Hubert H. Humphrey (D-Minn.) and Rep. Carl T. Durham (D-N.C.), a third pharmacist, Rep. Lawrence Brock (D-Neb.), was counted in Congress when the 86th convened.

A new analgesic (NIH-7519), 10 times as potent as morphine but safer, has been developed by Drs. Everette L. May and Nathan B. Eddy of the National Institutes of Health, who carried on the work of Dr. Lyndon Small who died of cancer in 1957.



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News and Notes

Associations

American Association of Dental Schools—*Reginald H. Sullens* of Chicago, associate secretary of the Council on Dental Education of the American Dental Association since 1951, has been named to fill the newly created position of executive secretary of the American Association of Dental Schools. This organization will represent 47 U.S. and 5 Canadian dental schools, with establishment of a full-time central office staff and headquarters in Chicago.

American College of Apothecaries—The Texas Chapter announces its new 1959 officers: *R. L. Brusenhan*, San Antonio, President; *Leon L. Kahanek*, Hallettsville, Vice President; and *Dr. Henry M. Burlage*, Austin, Secretary-Treasurer. This chapter has presented $200 to the Pharmaceutical Foundation of the University of Texas toward establishment of a scholarship.

Mellon Institute—*Dr. Harold P. Klug* has been appointed Assistant Director of Research of Mellon Institute. In 1945 he joined the Mellon Institute as Administrative Fellow and Head of the Department of Research in Chemical Physics.

National Society for Crippled Children and Adults—Twenty fellowship awards of $300 each are available for qualified persons interested in counselling and job placement of the cerebral palsied and otherwise physically handicapped. March 16 is the deadline date for applications for the awards, co-sponsored by the National Society and Alpha Gamma Delta, international women's fraternity.

Four weeks of training—June 15 to July 10–are required at the Institute of Physical Medicine and Rehabilitation of New York University-Bellevue Medical Center. Blanks can be secured from Personnel Service, National Society for Crippled Chidren and Adults, 2023 W. Ogden Avenue, Chicago 12.

National Wholesale Druggists Association—*H. C. Van Arsdale*, Executive Vice President of Smith Kline & French, Inc., was elected President of the Association at the annual convention, after having served as Chairman of the Board of Control in 1957. He is the 4th SK&F official to be elected to NWDA's highest office.

RHODE ISLAND PHARMACEUTICAL ASSOCIATION President, Norris H. Gladding (r), receives the A. H. Robins "Bowl of Hygeia" Award for Community Service in Pharmacy in 1958 from Ernest L. Bender, Division Manager for Robins in New England. This award, the international symbol of Pharmacy, was presentea at the first annual Pharmacy clinic of the Association, held at the University of Rhode Island November 9.

New York Retail Druggists' Association—Honored guest at this organization's annual banquet on April 19, 1959 will be *John W. Dargavel*, Executive Secretary of the National Association of Retail Druggists. *President Max Kirschner* announces the entire proceeds of the dinner, to be held at the Astor Hotel, New York City, will go to the Dargavel Foundation.

New York State Pharmaceutical Association—*Nicholas S. Gesoalde*, Executive Secretary, has been named Chairman of the Pharmaceutical Division of Muscular Dystrophy Association of America, Inc., for the second consecutive year. In this capacity Mr. Gesoalde will organize support for the MD clinics program among members of the pharmaceutical profession.

Oregon Society of Hospital Pharmacists—At a joint dinner meeting with APhA Oregon Branch, *Robert C. Resare*, Assistant Chief Pharmacist of Good Samaritan Hospital, Portland, was installed as President, with *Alma Robertson*, Hood River Memorial Hospital, and *Barbara Christensen*, Vancouver Memorial Hospital, as Vice President and Secretary-Treasurer.

Born in Gresham in 1929, Mr. Resare is a graduate of Oregon State College School of Pharmacy. Before assuming his present position he served in the Pharmacy Department, U.S. Naval Hospital, San Diego, Calif., and is a veteran of the Korean War.

Principal speaker at the affair which attracted nearly 100 Oregon pharmacists was *Dr. Joseph B. Trainer*, Director, Student Heath Service, University of Oregon Medical School. *James B. Low*, Assistant Chief Pharmacist, U.S. VA Hospital, Portland, officiated as toastmaster.

Proprietary Association—*Z. O. Moore*, Vice President of the Chattanooga (Tenn.) Medicine Co., has been elected to the Executive Committee of the Proprietary Association to complete the unexpired term of the late *Lupton Patten*, who is also a Past President of the Association.

BROOKLYN COLLEGE OF PHARMACY students of Lambda Kappa Sigma sorority present Mrs. Franklin D. Roosevelt with white roses following her lecture about her recent trip to the Soviet Union and her conversations with Krushchev. L to r: Dean Arthur G. Zupko, Janet Neilson, President of the sorority, Ruth Yang from China, Ara Hincenbergs from Latvia, and Elena Calderon from Cuba.

Colleges

Brooklyn College of Pharmacy—Reporting in her column "My Day" on her visit to BCP, Mrs. Franklin D. Roosevelt said:

"I confess I knew little about the education given men and women who make up our Doctor's prescriptions in our drugstores and I was very much interested in the research institute and the laboratories where studies are being made and experiments carried out which deal with therapy for control of diseases. I was surprised, in fact, to see the extent of the education given the young people who graduate from Colleges of Pharmacy. Although their special interests lie along clearly defined lines, and their studies have to be intensive in a particular area, it is interesting that they should still wish to carry on a course, like the one in which I spoke, dealing with general interests in various other fields."

Before addressing the student body Mrs. Roosevelt was conducted on a tour of the new therapeutic research and radioisotope laboratories by Dean Arthur G. Zupko and said she was greatly impressed by the scope and thoroughness of the research and the laboratory work of the pharmaceutical students.

Columbia University—The Alumni Association of the Columbia University College of Pharmacy has selected *Calvin Berger*, '16, as the recipient of the Henry Hurd Rusby Award for 1959. The presentation will be made at the annual alumni dinner dance at the Hotel Astor, New York City, April 5th.

Mr. Berger has been a member of the Executive Board of the Alumni Association, of the Board of Trustees of the College, and of the New York State Board of Pharmacy. He is serving at present as Chairman of the Executive Committee of the American College of Apothecaries.

Philadelphia College of Pharmacy and Science—This college continues as one of 10 colleges and universities in the metropolitan Philadelphia area to present courses by means of television lectures on the University of the Air, over WFIL-TV, Channel 6, in Philadelphia, during the second semester, January 22 thru May 28. Registrar *John E. Kramer* will be the host for the entire series, and 20 members of the faculty will present topics under the general theme "You and Your Health." The time will be Thursdays, 9–9:20 A.M.

UNIVERSITY OF TEXAS COLLEGE OF PHARMACY 7th Annual Pharmacy Refresher (2-day) Course attracted 85 leading Texas pharmacists and pharmaceutical representatives. Lecturers and panelists were drawn from university faculties, clinics, hospital and private pharmacies, and pharmaceutical manufacturers. Louis J. Fischl, APhA President (4th from r, 1st row) was the first guest speaker to address the assemblage.

Rho Chi Society—The Nu Chapter of the University of Texas School of Pharmacy has elected 1958–59 officers who are: *Thomas Clyde Brumson*, Houston, President; *Samuel Arthur Lane*, Texarkana, Vice President; *Dr. C. C. Albers*, Historian; *Dr. Esther J. W. Hall*, Secretary-Treasurer and Faculty Adviser.

University of Arkansas—*Drs. Elmer and Joy Plein* of the University of Washington School of Pharmacy, Seattle, visited the School of Pharmacy December 3–4. The Drs. Plein are on tour of a number of schools and colleges and medical centers of pharmacy throughout the United States. They were the guests of honor at a faculty dinner December 3 at the University Medical Center and took part in a discussion of professional and educational problems pertaining to pharmaceutical practice, following the dinner.

University of Illinois—*Dr. James E. Gearien*, Associate Professor of Chemistry, has been appointed head of the Department of Chemistry in the College of Pharmacy, Chicago Professional Colleges of the University of Illinois, to succeed *Dr. George L. Webster*.

Receiving degrees of B.S. in Pharmacy in 1941, M.S. in 1942, and Ph.D. in 1950 from the University of Illinois, he joined the University of Illinois staff in 1952 and since September has been Acting Assistant Dean of the College of Pharmacy.

University of Texas—*Dean Henry M. Burlage* announces that the Gustavus and Louise Pfeiffer Research Foundation of New York has awarded a grant of $3,000 annually for 3 years, 1959–61, in support of the Pharmacy Extension Program sponsored by the College of Pharmacy and Division of Extension.

University of Southern California—*Dean Alvah Hall* of the School of Pharmacy announces the following scholarships: *Roy A. Smith* and *Keith A. Seivers*, $475 each, from Los Angeles Drug Co.; *Morton Barak* and *Steve A. Meier*, $250 each, from Brunswig Drugs; *Majorie Duncon*, $200 from APhA Women's Auxiliary; *Carl Vitalie*, President, APhA Pharmacy Student Section, *Donald Wichman* and *Gary Sims*, $950 each, from Thrifty Drug Co.; *Richard Foster*, $300 from local medical, dental, and pharmaceutical associations women's auxiliaries; *Lauro Castro*, $300 from California Pharmaceutical Association Women's Auxiliary; *Jack Wasserman* $200, *Barbara Heun* $300, and *George Sheets* $300, from American Foundation for Pharmaceutical Education and USC alumni.

Continued on page 68

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News and Notes Continued from page 65

MASSACHUSETTS COLLEGE OF PHARMACY—250 alumni and friends celebrated its 136th Anniversary on January 13. L to r: L. F. Tibbets, Mass. Board of Pharmacy; Dean H. C. Newton, MCP; Dr. George F. Archambault, who spoke on the future of Pharmacy; Dr. S. M. Best, President MCP; Michael Fitzgerald, President, Mass. State Pharm. Assn.; and Charles B. Dunnington, 2nd Vice President, NARD.

Government

U.S. Civil Service—The Federal Government has served notice that it intends to grab its "fair share" of high quality scientists and engineers graduating from college this year and has worked out an aggressive recruitment program, *N. J. Oganovic* of the U. S. Civil Service Commission told the American Association for the Advancement of Science at its recent meeting in Washington. Mr. Oganovic indicated that beginning salary for the "highly qualified graduate with a bachelor degree" has been increased almost $1,000 over 1958's starting salary.

Office of Civil and Defense Mobilization was host at a 2-day meeting in Washington, D.C. in December to 36 research staff members from Federal agencies, the Armed Services, university research groups, and hospitals reporting latest developments in the fields of radiobiology and radiation medicine.

Bureau of Public Assistance—Appointment of a new Advisory Council on Public Assistance has been announced by *Secretary of Health, Education, and Welfare Arthur S. Flemming*. Established at the direction of the 85th Congress, the Council will study present Federal-State arrangements for financing public assistance.

Public Health Service—The National Institutes of Health has announced that 847 research grants and 119 fellowships totaling $15,168,650 were awarded during December 1958.

Dr. *Maurice Bender*, Assistant Chief, Standards Inspection and Certification Unit, Bureau of Commercial Fisheries, has joined the Division of General Medical Sciences at the NIH where he will be concerned with the administration of the research grants program of the Division.

Competitive examinations for appointment to the Commissioned Corps of the USPHS will be held throughout the Nation in March and April, *Surgeon General Leroy E. Burney* has announced. Examinations will cover 6 professional health, medical, and scientific categories.

Four additional members have been appointed to the Surgeon General's Consultant Group on Medical Education, according to Surgeon General Leroy E. Burney, bringing the membership to the planned total of 21. Composed of leaders in medicine, education, and public affairs, the group has been invited to recommend methods of providing the Nation with adequate numbers of well-qualified physicians over the next 10 years. The Committee will hold its next meeting February 19–20 in Washington, D.C.

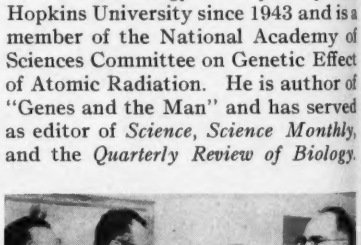
Hospital

The Eleventh Annual Hospital Pharmacy Seminar will be held at the University of Texas College of Pharmacy Library February 13–15. *Robert C. Bogash*, President, American Society of Hospital Pharmacists, will speak on "Potpourri in Three Parts," and there will be a number of other interesting reports and speeches, including two on the establishment and operation of poison information centers. The Seminar will close with the awarding of certificates by *Dean Henry M. Burlage*.

Ohio Society of Hospital Pharmacists—The Toledo Society of Hospital Pharmacists was host at Mercy Hospital to an autumn conference with the Ohio Society of Hospital Pharmacists, with *Mrs. Robert Fulton* as Chairman. Speakers were *Dr. C. J. A. Paule*, Supt., Bureau of Preventive Medicine and Adult Health, Toledo Board of Health; *Dr. Robert A. Hardt*, President, Armour Pharmaceutical Co., Chicago; *Sister Mary John*, Chief Pharmacist, Mercy; *Dr. and Mrs. Donald Francke* and *John Zugich*, University Hospital, Ann Arbor, Michigan; and *Robert C. Bogash*, President, American Society of Hospital Pharmacists.

Industry

Abbott Laboratories—*Dr. H. Bentley Glass*, authority on human genetics and member of the Atomic Energy Commission Advisory Committee for Biology and Medicine, spoke recently at Abbott on "Genes and the Man—New Vistas." His talk was sponsored by the Abbott Sigma Xi Club. Dr. Glass has been a member of the biology faculty of Johns Hopkins University since 1943 and is a member of the National Academy of Sciences Committee on Genetic Effect of Atomic Radiation. He is author of "Genes and the Man" and has served as editor of *Science*, *Science Monthly*, and the *Quarterly Review of Biology*.



LOUIS GDALMAN (2nd from r), director of the two pharmacies of the Presbyterian-St. Luke's Hospitals of Chicago, accepts E. R. Squibb plaques in behalf of the hospitals in recognition of the outstanding professional achievement and service to the public of over 5,000,000 prescriptions having been filled. L to r: John Hill and John T. Matthews of Squibb; Mr. Gdalman; and K. S. Klicka, M.D., Director of the hospitals.

American Cyanamid Company—A grant-in-aid has been accepted from ACC by the University of Delaware to investigate poultry diseases in the Delmarva area, the Company has announced.

Ames Company, Inc.—Seeking the most effective "prescriptions" for stimulating sales of Clinitest, its diabetes diagnostic aid, the Company, on February 9, launched a contest for registered pharmacists in retail drug stores. First prize will be a 10-day vacation for 2 in Honolulu; 6 other cash prizes are also being offered. The judges will be an outstanding group of editors of trade publications.

Armour Pharmaceutical Company—The appointment of *E. Ned Schultz*, M.D., as Associate Director of the Medical Department, has been announced by Armour President *Robert A. Hardt*.

Dr. Robert A. Hardt, President, delivered the annual Samuel Melendy Memorial Lecture at the University of Minnesota College of Pharmacy on February 3. Selection of the speaker was made by vote of the faculty and the APhA. Dr. Hardt is a registered pharmacist and is a Past President of the American Pharmaceutical Manufacturers Association.

Bard-Saratoga Laboratories, Inc.—*E. S. Thomforde* has been named Vice President and General Manager, it has been announced by *Robert H. Broh-Kahn*, M.D., President of that firm and of its parent organization, Bard Pharmaceuticals, Inc.

Colgate-Palmolive Company and Wildroot Company, Inc. have announced an agreement under which Colgate will acquire Wildroot Company early this year. Wildroot management has announced the expectation of continuing as a subsidiary of Colgate.

Dome Chemicals, Inc. has moved to larger quarters at 125 West End Avenue, New York City, it has been announced.

Eaton Laboratories is opening its 16th sales district, and *Lawrence R. Eggleston* has been named Manager, Eaton has announced.

Ethicon, Inc.—*Dr. L. E. Gordon* of Ethicon will speak on Febrary 27 on "New Horizons in Sterilization—Irradiation," at the third of the 1958–59 Becton, Dickinson Lectures at Seton Hall College of Medicine and Dentistry.

Glenbrook Laboratories—Appointment of *Glenn W. Johnston* as Division Vice President of Glenbrook has been announced by Sterling Drug, Inc.

Heyden Newport Chemical Corporation has announced the appointment of *Robert M. Aude* as Vice President and General Manager of the Heyden Chemical Division and of *Leonard F. Pinto* as Manager for rubber chemicals of the Newport Industries Division.

Chas. L. Huisking & Company—In a merger of affiliated corporations, Glyco Chemicals, Clintbrook Chemical Company, and Peder Devold Oil Company have been made operating divisions of Huisking, *President William W. Huisking* has announced.

The Company has announced the purchase from E. I. du Pont de Nemours & Co., Inc., of the latter's patents, processes, formulas, and other material for the production of medicinal and technical grade synthetic camphor.

Johnson & Johnson—*Dr. John Henderson*, J&J's Medical Director and author of Bantam book "A Parent's Guide to Children's Illnesses," is the recipient of the 1958 "Maggie" Award given annually to authors and publishers for editorial excellence.

Winner of the John F. Kiley Memorial Award, J&J has announced, is *Russell T. Teall, Jr.*, of Cape Elizabeth, Maine. This award is the Company's highest sales honor.

Eli Lilly and Company—*Robert M. Kraft* has been named to the new post of Assistant Director of Lilly's Market Research Division, the Company has announced. *G. Wallace Robb* succeeded Mr. Kraft as Manager of the Marketing Studies Department, and *Richard D. Wood* became Manager of the newly created Export Market Research Department.

Vern H. Hakes has been named Administrative Assistant to the Company's Vice President of Industrial Relations.

Mallinckrodt Chemical Works has announced the establishment of a separate company, Mallinckrodt Nuclear Corporation, to carry outs its privately owned nuclear fuels business. *Joseph Fistere*, President of Mallinckrodt Chemical Works, will also serve as President of the new Corporation, while *Frederick Belmore* will be Vice President and General Manager, and *Edward Malinckrodt, Jr.*, will be Chairman of the Board.

Warren F. Michener has succeeded *Walter S. Keutzer*, retired after 49 years of service, as Sales Manager of its Western Division, Mallinckrodt has announced.

Marion Laboratories, Inc.—*Ewing M. Kaufman*, President, has announced the acquisition of Arnold O. Haug and Company. *Mr. Haug* has joined Marion as Tablet Production Manager.

S. E. Massengill Company has announced the promotion of *J. H. Morris, Jr.*, to the position of West Coast Regional Sales Manager.

The Company recently held a Marketing Executives' Conference in St. Louis as a springboard for introduction of its 1959 marketing plans for professional, veterinary, and consumer product lines.

McKesson & Robbins has announced plans to honor new presidents of state pharmaceutical associations, upon their being installed at state conventions, with the presentation of a handsome plaque and removable gavel.

McNeil Laboratories, Inc.—*Robert L. McNeil, Jr.*, Chairman of the Board, has announced that *Vincent G. Kling* has been selected as architect for the firm's new plant in Whitemarsh Township, Pa., to be erected on 89 acres, beginning in the late spring.

Merck & Company—The appointment of *Albert W. Merck*, son of the late *George W. Merck*, as Assistant to *Executive Vice President Henry W. Gadsden* has been announced by the Company. *Herbert H. Blevins* has been elected Controller and *Harold A. Rockwell* Treasurer of the Company.

Merck Sharp & Dohme Research Laboratories has announced the ap-

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Service Security Savings
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INSURANCE CO.

CONSULT OUR AGENT

INDEX INTERNATIONALIS PHARMACEUTICUS

Heinige..Just..
Navrátil..Rybáček..
Šumbera

Pharmacists and others in the medical field will welcome this convenient manual for quick reference. The *Index Internationalis Pharmaceuticus* is a collection of official and unofficial, as well as scientific and common, designations of medicaments, drugs, and materials for laboratory work. The *Index* also contains medicines available under trademarks.

Latin designations in the *Index* facilitate the use of this invaluable manual on a wide international scale. Data about the materials and preparations noted are included, along with cross references, making it a comprehensive register of all materials mentioned in the abstracts of technical literature.

The *Index Internationalis Pharmaceuticus*, which is published by The Health Care Publishing House, Prague, sells for $11.67 per copy, and may be ordered through ARTIA, Czechoslovak Foreign Trade Corporation, Ve Smečkách 30, Prague 11, Czechoslovakia.

pointment of *Richard T. Smith, M.D.*, as Director of Medical Service.

Norwich Pharmacal Company has promoted *Harry A. Spangenburg* to the position of Assistant Manager of Formula and Label Control, according to *Dr. D. M. Copley*, Chief Chemist.

Owens-Illinois has announced the passing away on January 6 of *William M. Beckler*, 65, assistant to the general manager of Libbey Glass Division and nationally-known figure in the glass industry for a quarter of a century.

Parke, Davis & Company—*President Harry J. Loynd* has announced the election of two new Vice Presidents: *Harold K. Daniels* (Personnel Relations) and *Carl Johnson* (Advertising and Public Relations).

Dr. Leon A. Sweet, Vice President and Director of Research for Parke, Davis, has been elected to the Board of Trustees of the Detroit Institute of Cancer Research.

Samuel L. Shenefield, Superintendent of the Capsule Division for Parke, Davis, has retired after 40 years of service.

Parke, Davis expects to move into its new $12,500,000 Medical Research Laboratories in Ann Arbor, Mich., this fall, according to *President Harry J. Loynd*.

Retailing

Connecticut—*John Shostak*, proprietor of the Professional Pharmacy in South Norwalk, recently re-elected to the House of Representatives in the Connecticut General Assembly and the only member of his profession in the Assembly, in recent talks to two pharmacists' associations, urged members to take more dynamic roles in their public relations. Steady participation in local citizen activities was pointed out by Mr. Shostak as a dependable way to achieve public confidence.

Georgia—*E. F. Palmer* and *W. R. Harbin*, pharmacists, Palmer Drug Company, Calhoun, have been awarded first prize in the window display contest sponsored by the Georgia Pharmaceutical Association, officials of the Association have announced.

Maryland—*Frank R. Milo*, for the past 6 years associated with the University of Maryland School of Pharmacy, is opening his own retail pharmacy at 2620 East Monument Street.

GRAY DRUG, INC., Cleveland, Ohio, being awarded a plaque for public service efforts in promoting the "Emergencie Don't Wait" program sponsored by Johnson & Johnson. L to r: Raymond G. Horning and Robert S. Bradford of J&J; Adolph Weinberger, Chairman of the Board of Gray, accepting award; and Henry Gray and Herbert Durr of Gray

International

Federation Internationale Pharmaceutique—The Secretariat of the Federation has been moved to 11 Alexanderstraat, La Haye, Holland. *Dr. J. W. Birza* has been succeeded by *Dr. J. H. M. Winters* as Secretariat General.

Guatemala—Five professors of dentistry have arrived in the U.S. from the University of San Carlos to observe for 2 months the latest dental techniques. A grant from the International Educational Exchange Service of the Department of State has made possible their study tour.

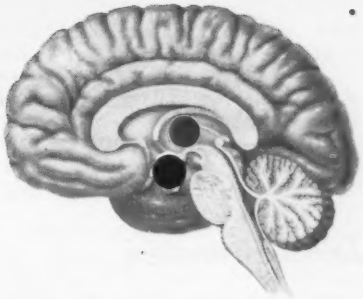
Department Coordinator of International Affairs—*Secretary of Health, Education, and Welfare Arthur S. Flemming* has announced the establishment of this new position. "The Department has long had particular concern in international affairs as they related to health, education, vocational rehabilitation, social insurance, social welfare, and other areas. The creation of this coordinating position will help the Department more adequately conduct its expanding activities of an international nature," Mr. Flemming said.

The George Sarton Medal of the History of Science Society for 1958 has been awarded to *Dr. John F. Fulton*, noted physiologist and author at the Yale School of Medicine. Created in 1955, the Medal was made possible by the Charles Pfizer Company.

Japan—*Dr. Roger Adams*, distinguished American chemist, has been named an honorary member of the Chemical Society of Japan. Previously, chemical organizations in England, Poland, France, Switzerland, Spain, and Germany have accorded him similar honors. Dr. Adams is Past President of American Association for the Advancement of Science and of the American Chemical Society. His awards include the Charles Lathrop Parsons Award for outstanding public service and the Priestly Medal, highest award in American chemistry.

England—Vick Chemical Company has announced the recent acquisition for cash of its first overseas drug company, Milton Antiseptic, Ltd., of London.

World Health Organization—*Dr. Abraham Horwitz* of Chile has succeeded *Dr. Fred L. Soper* as Director of the Pan American Sanitary Bureau, the Americas' regional office of WHO.



Announcing

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PROZINE implements the new concept of emotional disturbances, i.e., that emotional disturbances are mediated by several brain areas. Unlike any other ataractic agent, PROZINE acts on two areas of the brain—the thalamus and hypothalamus. The result is more specific control and far fewer side-effects than with other ataraxics.

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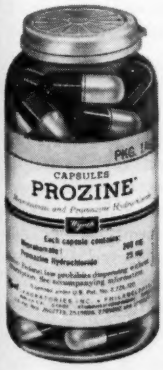

SUPPLIED: Bottles of 50 green-and-white capsules, each containing 200 mg. meprobamate and 25 mg. promazine hydrochloride.

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Branch News

Local Branches

Chicago Branch—*Robert P. Morris* of the Glidden Company, spoke on "Living With Color" at the December dinner meeting. *George Scharringhausen, Jr., Louis Gdalman, Edward Duncan, Howard Stephens,* and *Ignatius Kaski* took part as panelists in a discussion entitled "Opportunities in Pharmacy."

As part of its centennial program, the College of Pharmacy of the University of Illinois presented on December 10 a group of wholesale druggists in panel discussion on "The Wholesale Druggist—A Vital Link in Today's Practice of Pharmacy." Among those participating was *Milton S. Prizant,* Vice President of this Branch.

Indianapolis Branch—*John Jolt,* attorney for Eli Lilly & Co., addressed members on "Legal Aspects of Pharmacy" at a recent meeting. *Philo Burrin* reported on the APhA House of Delegates meeting in Chicago.

Memphis Branch—Officers elected to serve during the coming year are: *Joe R. Sykes,* President; *Vincent J. Ryan,* Vice President; *Mary L. Bowles,* Secretary; and *James B. Cummings,* Treasurer. *Dr. Sheldon D. Feurt,* newly appointed Dean of the College of Pharmacy, University of Tennessee, was guest speaker at the installation banquet December 18.

Miami Branch—At recent meetings *Ed M. Grundlach* of Schering Corporation spoke on "Renaissance of Pharmacy," stressing relationships between pharmacists and physicians; discussion groups reviewed (1) facts of the aspirin case in Washington, D.C., and (2) the proposed drug and poison law of the Metro Government of Dade County. *Bill Morrison* was selected to head a committee on drug and poison control to meet with their local government.

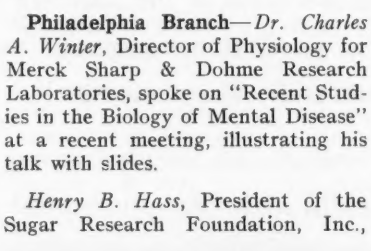
New York Branch—A program on "Diuretics—Physiology and Pharmacology," presented speakers *Dr. Paul V. Buday,* Assistant Professor of Biological Sciences, Fordham University, and *Dr. Michael Clay,* Assistant Professor of Pharmacology, Columbia University, on January 14, at Hotel Roosevelt, New York City.

375 COLUMBIA UNIVERSITY COLLEGE OF PHARMACY students attended special meeting to hear address of APhA President Louis J. Fischl. Dr. E. Emerson Leuallen (l), College of Pharmacy Dean, and Ronald Wecker (r), APhA Student Branch President, welcome President Fischl before the meeting.

Oregon Branch—At a joint dinner meeting with the Oregon Society of Hospital Pharmacists, officers were installed for both organizations. For the Oregon Branch these were: *Yoshio Inahara,* President; *Wayne M. Hatch,* Vice President; *Stanley E. Hartman,* Secretary; and *Russell L. Austin,* Treasurer. *Dr. Joseph B. Trainer,* Director of Student Health Service, University of Oregon Medical School, was the principal speaker. *James B. Low,* Assistant Chief Pharmacist of the U.S. Veterans' Hospital, Portland, was toastmaster.

Philadelphia Branch—*Dr. Charles A. Winter,* Director of Physiology for Merck Sharp & Dohme Research Laboratories, spoke on "Recent Studies in the Biology of Mental Disease" at a recent meeting, illustrating his talk with slides.

Henry B. Hass, President of the Sugar Research Foundation, Inc., spoke on December 11 on "Recent Advances in Sugar Chemistry of Particular Interest to Pharmacy."



PUGET SOUND BRANCH recently installed officers for the coming year. These are: Joseph E. Birmingham (standing), President; Alvin Hagg, Vice President; and Dr. Theodore Taniguchi, Corresponding Secretary. James Button, Treasurer, is not shown.

Student Branches

Albany College of Pharmacy—*Dr. John McShefferty's* address on December 8 on "Pharmacy in Great Britain" revealed sharp contrasts in Pharmacy in our two countries, especially in the "socialized medicine" program. Dr. McShefferty, a Research Fellow in Phytochemistry at Winthrop Laboratories, received his training at the University of Glasgow, Scotland.

Brooklyn College of Pharmacy—*Louis J. Fischl,* President of the AMERICAN PHARMACEUTICAL ASSOCIATION, spoke before an all-student assembly December 10 on "Pharmacy's Future."

The following APhA Student Branch members have been elected Remington House Plan officers for 1959: *Gary Mayer,* President; *Robert Pontario,* Vice President; *Louis Mazzola,* Secretary; and *Arthur Nelson,* Treasurer.

Butler University — Featured speaker of the first official fall meeting was *Dr. Ralph M. Reitan,* Research Psychologist of the Indiana University Medical Center, who spoke on "Psychological Behavior as Related to Lesions in the Brain." At an earlier coffee and doughnut "get acquainted" period new students were introduced to the Branch's new officers.

Ferris Institute—Plans for an intensive membership drive were made at the first social meeting of the school year and two films, furnished by Burroughs Wellcome & Co., were shown.

Howard College—The Pharmacy Department's Christmas Party, held December 11, honored *Dr. Leslie S. Wright,* President of Howard College, and his family. Entertaining skits were provided by various college organizations. Toys collected by student members of this Branch were presented to the Birmingham Childrens Hospital.

Howard University—A panel discussion of employer-employee rela-

FORDHAM UNIVERSITY COLLEGE OF PHARMACY newly elected officers and Guest Speaker Rolland Synder, Professional Relations Representative of Mead Johnson & Co., during "High School Day" Program. L to r: Matthew Di Giorgi, Treasurer; Dr. L. N. Elowe, Faculty Advisor; Mr. Synder; Stuart B. Cullen, President; Rose Serrago, Secretary; and Samuel A. Paul, Jr., Vice President.

tionships as applied to the graduate pharmacist was the highlight of the pre-Christmas meeting. Officers elected for 1958–59 are: *Fannie L. Jones*, President; *Herbert L. Hunter*, Vice President; *Constance A. Joy*, Secretary-Treasurer; and *Ida M. Morton*, Asst. Secretary-Treasurer.

Massachusetts College of Pharmacy—*Dr. Norman J. Lewis*, of the Monsanto Chemical Co., will speak on the "Role of Fine Chemical Manufacturer in Pharmaceutical Preparation," at the February meeting. On March 3 *Edson F. Woodward* of S. B. Penick Company will talk on "Crude Drug Growing and Harvesting."

Medical College of Virginia—Featured speakers at recent meetings were *Dr. Rudolph Blythe*, Director of Pharmaceutical Research for Smith Kline & French, who spoke on "Opportunity for Pharmacists in Industry" and illustrated his subject with slides, and *Major James Hanson* of the Medical Service Corps, who talked on "The Role of the Pharmacist in Military Service" and emphasized his points with a short film.

New England College of Pharmacy—*Dr. George Michael*, Director of the Food and Drug Division, Department of Public Health of the Commonwealth of Massachusetts, addressed members on December 11 on the subject of problems of his department and of the pharmacist.

Northeast Louisiana State College—*President Lynn Meredith* announces 26 new members of this Branch. *Charles Bennett, Robert Couch, Jerry Hemstreet*, and *Dick McGuirt* have been appointed as a committee for setting up an awards system.

At the December 8 meeting members viewed the Burroughs Wellcome & Co. film "Ergot, the Parasitic Fungi," depicting the discovery and present-day use of ergot and its derivatives.

Dr. Joseph H. Kern, formerly faculty adviser to the APhA Student Branch of the University of Florida College of Pharmacy, has joined this School of Pharmacy staff.

Philadelphia College of Pharmacy & Science—Officers elected for the 1958–59 term are: *Richard Suscha*, President; *Keith Weikel*, Vice President; *Betty Ann Mason*, Secretary; and *Francis W. Loehle*, Treasurer.

St. John's University—1959 officers recently elected are: *Stanley L. Aaron*, President; *Robert L. Tillander*, Vice President; *Francis T. West, Jr.*, Secretary; and *Anthony F. Acocella*, Treasurer. Class representatives include *Jack Truncale, Andrew Dettling, Michael Kopcho, Vincent Zangre, Kenneth McCrary, Howard Glad, Timothy Cloonan*, and *Frank Ursino*.

St. Louis College of Pharmacy—*Dr. John Davidson* of the Washington University School of Medicine was speaker at the first of a series of question-discussion meetings participated in by both faculty and students. His topic was "What Does the Physician Expect of the Pharmacist?"

Southwestern—*James Hudson* of Eli Lilly & Co. talked on phases of drug manufacture, illustrating his address with slides, at the December meeting. American Foundation for Pharmaceutical Education scholarships were received by *Dub Denny, Carroll Halstead, Robert Dishman*, and *Tom Rukes*. Officers of the newly organized pharmaceutical fraternity, Kappa Epsilon, were introduced.

University of Arizona—Officers elected to serve in 1959 are: *Bob Marder*, President; *Milo Kentera* and *Hank Winship*, Vice Presidents; *Ola Wells*, Secretary; *Wilson Bow Woo*, Treasurer; and *Albert Hernandez*, Sergeant at arms. Branch members donated gifts to the Arizona Childrens Home during Christmas.

University of California—Officers elected for 1958–59 are: *Thomas W. Roberts*, President; *Harry A. Avila*, Vice President; *Joan B. Lilley*, Secretary; and *Joyce E. Taylor*, Treasurer.

University of Houston—Officers recently elected for 1959 are: *Frank N. Russell*, President; *Joe Lovoi*, Vice President; *Irma Almaraz*, Secretary; and *Johnnie Fadal, Jr.*, Treasurer.

University of Illinois—As part of the College of Pharmacy Centennial, this Branch joined in the observance of the 100th academic year of its founding, with the first lecture given by *Dr. Sol Gershon*, former Branch member, College of Pharmacy graduate, and faculty member. Dr. Gershon, now Associate Director of Research for Lever Bros., presented an interesting talk on the problems of a pharmacist in the cosmetic industry.

Officers elected for 1958–59 are: *Arthur E. Karwacki*, President; *Marshall G. Olsen*, Vice President; *Patricia Ann McLoed*, Secretary; and *Lawrence Fischer*, Treasurer.

University of New Mexico—*Dr. Marvin H. Malone* has been appointed faculty adviser to succeed *Dr. William C. Fiedler*. Officers elected for 1958–59 are: *Tony Pesavento*, President; *Ralph Harryman*, Vice President; *Louella Romera*, Secretary; and *Dr. Marvin H. Malone*, Treasurer. *Nada Tangway* and *William Church* will serve as program and refreshments chairmen.

University of Oklahoma—*Gayle Pittman*, Student Branch Secretary, gave impressions of European pharmacies gained while traveling abroad last summer, at a recent meeting.

Mack M. Griffin, first R. L. Sanford Memorial Scholarship winner, is the second member of his family to specialize in Pharmacy at the University of Oklahoma. His sister, *Mona* (*Mrs. Phil Alberton*), a 1956 graduate, is now a practicing pharmacist of Stillwater.

University of Pittsburgh—newly elected officers for 1958–59 are: *Harold Crist*, President; *Richard Bender* and *Robert McKenzie*, Vice Presidents; *R. Lee Pfrogner*, Secretary; and *Victor George*, Treasurer. *Patricia Neal* was selected Pharmacy Queen with *Elaine Kalaris, Fran Mazor*, and *Vivian Turner* as her attendants.

University of Texas—*Louis J. Fischl*, President of the AMERICAN PHARMACEUTICAL ASSOCIATION, recently addressed members of this branch, and gave details of the new plan of choosing a "Pharmacy student of the month" from which honor list one will be chosen to attend the national APhA Convention.

Current Comment

Enrollment in Colleges of Pharmacy

According to the last report of the American Association of the Colleges of Pharmacy, covering the registration of all students in schools and colleges of pharmacy in the Continental United States, the University of the Philippines, and the University of Puerto Rico, the total enrollment has increased appreciably.

Enrollment for all colleges of the Continental United States totals 17,264, as compared with 16,571 for the previous year, an increase of 693 students, or 4.2%. The total number of women enrolled is now 2,115, a 7.7% increase over the previous year.

A total of 5,841 new students were registered in the U.S. colleges, as compared with 4,655 for 1957–58, a gain of 25.4%. There are 3,966 students listed as seniors in U.S. colleges of pharmacy, an increase of 50 over the previous year.

The colleges of pharmacy in the Universities of the Philippines and Puerto Rico show 320 students registered, compared with 373 in 1957–58, a drop of 53 students, or 16.5%.

Of the 76 accredited colleges in the United States, 9 are on the 4 and 5-year program, 11 are on the 5-year program, and only 2 are on the 6-year program. The balance of the schools are offering a 4-year program only. This is an increase of 5 schools offering the 5 or 6-year program, with the 5-year program becoming compulsory in 1960.

The over-all figures are most encouraging, reports Dr. H. G. Hewitt, Chairman of the AACP Executive Committee who points to a normal student population increase and the beginning of results due to the efforts of many groups, associations, undergraduate schools, and individual pharmacists.

Drugs and Cold War Weapons

The number of people on earth increased in 1958 by some 47,000,000, according to the Population Reference Bureau. This growth exceeds the total population of all the New England states, plus those of New York, New Jersey, Pennsylvania, and Maryland. Furthermore, says the Bureau, if the present birth rate persists, by 1980 the world population will be more than 4,000,000,000, an overwhelming percentage of whom will be living in what are now known in the West as underdeveloped countries.

The nutritional problem to be faced is obvious. Less apparent, the Health News Institute points out, is the health problem. Millions of people will be huddled together under conditions which will be open invitations to epidemics and medical disaster.

In long-range anticipation of this population growth, a score or more of American pharmaceutical houses have in the past year announced plans to expand their overseas operations on five continents, building plants, hiring native personnel, with only American know-how in charge locally.

And perhaps this is the really constructive kind of statesmanship. In the long run, a drug which destroys malaria in India or kills yaws in Africa may prove to be a more decisive weapon in winning the Cold War than any intercontinental ballistic missile.

Senator Humphrey's Agreement

Perhaps the most important area of conversation which Senator Hubert H. Humphrey had with Premier Krushchev in Moscow was the agreement with Krushchev on international medical research cooperation.

During the 8-hour conference between the 2 men at the Kremlin Mr. Krushchev gave his enthusiastic approval to the program which included the following:

1. "Full speed ahead" on plans for an International Medical Year on research and public health, possibly to begin in June 1961 and continue for 12 to 18 months.
2. An increase in the flow of medical data between East and West.
3. Greater personal contact between U.S. and Soviet medical scientists through correspondence and visits, and more participation in international meetings and in panels of experts of the World Health Organization.
4. Broadening of the medical provisions of the Lacy-Zarubin Agreement which covers U.S.-Soviet exchanges in the fields of science, technology, and education.
5. Collaboration in intensified perinatal research, covering the period from the 20th week of pregnancy to the first month after birth.

Most of Senator Humphrey's program is included in a bill submitted by Senator Lister Hill (D., Ala.) near the end of the 85th Congress. The bill is expected to pass in this session.

The International Medical Year envisaged would consist of broadening epidemiological reports throughout the world, a drive for raising national health research budgets, more international meetings, increases in fellowship awards, and attempts to single out one or two diseases for eradication.

Legislation on Coal Tar Colors

Pharmacy is responsible for the production and use of tremendous quantities of coloring materials for use in foods, drugs, and cosmetics. During recent years the safety of some of the coloring agents now in use has been questioned. Pharmacists in both the profession and the industry will be interested in the following chronology which has been prepared by the Food and Drug Administration, U.S. Department of Health, Education, and Welfare:

1856: The first synthetic color was produced in England. Other synthetic colors followed rapidly and soon appeared in food.

1886: The U.S. Congress passed a law that authorized the addition of coloring matter to butter.

1896: The U.S. Congress passed a law that recognized coloring matter as a legitimate constituent of cheese.

1906: The original pure food and drug law was enacted. The regulations issued under it provided that only harmless colors could be used in food products.

1907: By this year a special administrative procedure was developed to safeguard colored food. Seven colors were listed as suitable for use in food provided they were pure enough; each batch of color had to be tested by competent experts and found to be nontoxic and free from harmful constituents. (A few other colors were added to the list later.)

1938: A more modern pure food and drug law was enacted (the Federal Food, Drug, and Cosmetic Act). It reaffirmed the national policy of allowing synthetic colors in food subject to safeguards considered necessary to protect the public health and prevent deception of consumers. It gave legislative sanction to the established administrative practice of listing certain colors for use in food and required that each batch of listed colors be tested by the Food and Drug Administration for purity before it could be marketed.

While in 1938 Congress recognized that most coal tar colors were toxic, such as those used to dye cloth or make paint, it thought an adequate supply of harmless colors had been developed under the administrative practice of the preceding 30 years and presumably could continue to be developed as needed. So Congress provided in the law that if a coal tar color is harmless, it may be used in food without limitation; that if the color is itself a toxic substance, FDA must decline to permit any amount of it in food. There is no middle ground that allows FDA to establish a safe level of use for a coal tar color. Similarly, coal tar colors may be used in drugs and cosmetics only if harmless.

1939: After public hearings, 17 food colors were listed as harmless and suitable for use in food. (Two more were added later.)

1950: The need for further studies became apparent when some children were made sick by an unusually high concentration of a permitted orange dye (FD&C Orange No. 1) in Halloween candy. Using newer pharmacological procedures, FDA started new tests on the food colors.

1953: The new testing showed that FD&C Colors Red No. 32, Orange No. 1, and Orange No. 2 were not harmless.

1953–55: During the period December 15, 1953, to November 10, 1955, there was considerable activity. The Secretary of Health, Education, and Welfare issued a Notice of Hearing to amend the color certification regulations by deleting these three colors from the food list. The hearing was held in January 1954; the time for filing briefs on the hearing was extended at industry's request; and on December 22, 1954 the Secretary issued a notice of proposed delisting of the three colors. The time for filing exceptions and briefs was extended, in January 1955, at industry's request. On November 10, 1955, the Secretary issued a final order removing the colors from the group permitted in food. Meanwhile, there were other developments having a significant bearing on this entire question:

(1) In June 1955, a Citizens Advisory Committee, appointed by the Secretary of Health, Education, and Welfare, recommended that the Department arrange for a review of FDA's research program on certified dyes to determine whether it was in the interest of public health.

(2) In October 1955, children were made sick by a high concentration of FD&C Orange No. 1 in a popcorn confection, "Halloween Cats."

(3) In December 1955, nearly 200 people, mostly children, were made ill by FD&C Red No. 32 after eating popcorn colored with the dye.

1956: In June 1956, a committee appointed by the National Research Council, in accordance with the recommendation of the Citizens Advisory Committee, having studied FDA's coal tar color research program, concluded that it was well chosen and included problems deserving of the highest priority.

The Committee commented, however, that the present law is unrealistic with respect to coal tar colors. It stated, "This Committee feels compelled to indicate that the certification of a compound as 'harmless and suitable for use' in foods, drugs and cosmetics, as required under the present law, is unrealistic unless the level of use is specified. Under a rigid interpretation of this directive, many components of ordinary diet could not be certified."

The Committee pointed out further that at the present rate FDA's laboratories would require 25 years to complete the testing of all of the colors accepted for use in foods, drugs, and cosmetics.

Special Action with Respect to FD&C Red No. 32 on Oranges—In June 1956, Congress enacted a law which allowed FD&C Red No. 32 to be certified, until March 1, 1959, solely for use in coloring the skins of oranges. The law was approved and became effective in July 1956. After March 1, 1959, when the law expires, the use of Red No. 32 on oranges will not be legal.

Court Appeals on Red No. 32, Orange No. 1, and Orange No. 2—In February 1956, the coal tar color industry committee appealed the delisting of the three colors to the U.S. Court of Appeals in New York (2d Circuit). This court found that the Secretary's action was taken in accordance with the law and should not be overruled.

The citrus industry challenged the Secretary's delisting of Red No. 32 with respect to its use on oranges by an appeal to the United States Court of Appeals in New Orleans (5th Circuit). This court found that the Secretary should certify the red color as harmful for use in coloring of oranges and found that the coloring of oranges is required.

Since the decisions of the two Circuit Courts were in conflict, the Government appealed the latter decision to the Supreme Court.

1958: On December 15, 1958, the Supreme Court found that the Department's actions were proper. It reversed the decision of the 5th Circuit Court and held that the Department of Health, Education, and Welfare does not have the authority to issue tolerances for a coal tar color that injures test animals when fed at the concentrations employed in FDA's experiments.

Actions with Respect to F&D Yellow Colors Nos. 1, 2, 3, & 4—January 1957 to January 1959: As soon as possible after starting the retesting of all food colors, these four yellow colors were fed to laboratory animals using the newer scientific procedures. By January 1957, the tests showed that they caused harm at feeding levels judged appropriate by FDA scientists. FDA published first a proposal and then an order removing the four yellows from the list of colors permitted in food. The color industry challenged the order and asked for a public hearing on it. The public hearing and the effectiveness of the order were held in abeyance until the decision of the Supreme Court in the case described above.

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Career Opportunities

The Canal Zone Government, an agency of the United States Government, is interested in obtaining applications from qualified pharmacists for appointment in the Canal Zone. Appointees will be assigned to the pharmacy of a large Government hospital with an outpatient census of approximately 135,000 visits annually.

Included among the benefits extended to employees of the Panama Canal Company are U.S. Civil Service retirement; free home leave travel to the United States for an employee and his family every two years; and accumulation of approximately two months of leave every year, exclusive of 40 hours of travel time. Also available to an employee at a moderate cost is Federal Group Life Insurance and an employee-sponsored medical and hospitalization plan.

In addition, an employee recruited in the United States, including his family and personal effects, but not his automobile, is brought to the Canal Zone at United States Government expense and returned to the United States, also at Government expense, upon termination provided he complies with the terms of his employment agreement.

Housing and utilities are provided at reasonable rates and there are many opportunities available for recreation and sports. There are two well staffed and equipped hospitals in the Canal Zone as well as company-operated commissaries and service centers and a highly rated school system.

Further information may be obtained by writing to George F. Welsh, Chief, Employment & Utilization Division, Panama Canal Company, Canal Zone, Balboa Heights, C.Z.

Orientation in Pharmacy

As a service to Colleges of Pharmacy, McKesson & Robbins, Inc., has just published *Orientation in Pharmacy—An Overview*, written by Dr. Ralph W. Clark, Dean of the College of Pharmacy, University of Oklahoma.

Orientation in Pharmacy has been written to asist new students in pharmacy as they start their college courses. Dr. Clark presents an overview of the subject matter, including a survey of some of the main facts and ideals of the profession, its literature, associations, legal requirements, and opportunities. Special emphasis has been placed on the development of ethics and its application to Pharmacy.

Copies of *Orientation in Pharmacy* may be obtained from the Drug Relations Department, McKesson & Robbins Inc., 155 East 44 Street, New York 17, N.Y., Attention: Dudley J. Taw.

Medical Supply Experiences

"The U.S. Army History of Medical Supply during World War II" is presently being written by the Surgeon General's Historical Unit which is soliciting material to augment its archives on the subject as well as the names and addresses of those individuals who contributed to the success of Medical Supply.

Many of the readers of THIS JOURNAL who were concerned with Medical Supply during World War II can make a valuable contribution to this history by supplying all the information they have.

The Surgeon General points out that it is surprising how frequently a supposedly insignificant item or personal experience will bridge the gaps within the official files, accentuate a point, or bring to light a latent factor of importance. Therefore, the Surgeon General asks that all such material and names with addresses be submitted to Lt. Col. R. L. Parker, Project Officer, The Historical Unit, Walter Reed Army Medical Center, Washington 12, D.C. The material and pictures will be returned to the contributors if not specifically donated to the Medical Archives.

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Editorial

Medicine is Pharmacy

When an impartial editor who is also a physician of high repute openly praises Pharmacy as he did in the editorial reprinted on page 21 of the last issue of THIS JOURNAL, it is evident that appreciation for the pharmaceutical profession and industry by other members of the health team continues at a high level.

We have often wondered, however, how many of the general public truly recognize what Pharmacy means to our country and to every other country on this globe.

What Has Happened?

What has happened to mankind because of Pharmacy? It is all in the irrefutable records carefully collected and documented many times. Pharmacy, which was in the beginning synonymous with Medicine, today gives the physician his tools for the prevention, diagnosis, and treatment of man's many ailments. The result on the average has been long life, a lengthened productive period for each breadwinner, increased vitality, and clarity of thought unfettered by physical and mental disease. It is estimated that tens of thousands of persons now living will reach the age of 100, many still with the ability to think clearly.

What Would Happen?

What would happen if Pharmacy were totally removed from our economy? Has anyone ever tried to envision such a calamity?

Take away the pain relievers such as aspirin, codeine, morphine, meperidine, and all the other analgesics supplied to hospitals to make surgery possible, and to physicians and pharmacists for distribution to man for the alleviation of all sorts of pains, from simple headaches to the agonies of cancer and other unbearable conditions. Just imagine the situation that would exist if pain ran unchecked.

Take away the hormones packaged by Pharmacy—the pituitary, adrenal, pancreatic, parathyroid, and sex hormones. Can we visualize what the results would be? Imagine the increased numbers of dwarfs, cretins, giants, and sexually immature, the millions who would die with diabetes prematurely, the increasing numbers of sluggish and unhappy morons, and the premature deaths and increased suffering due to Addison's disease, the climacteric, and many other conditions.

Take away the antibiotics—penicillin, streptomycin, chloromycetin, the tetracyclines, kanamycin, and all the other specific and broad spectrum antibiotics which control disease in man and animals. Try to visualize the results of uncontrolled disease. No longer do we fear the Black Death, the plague which killed tens of millions of people over comparatively short periods of history. No longer do we lose hope when diseases like tuberculosis, pneumonia, and diphtheria descend upon a member of our family. Each new disease, like the resistant infections in hospitals that are currently such a problem, would go unchallenged were it not for the ingenuity of Pharmacy.

Take away the sedatives—the barbiturates, the tranquilizers, the narcotics, and all the other somnifacients, anticonvulsants, hypnotics, and relaxants. The tendency would be for mental institutions once again to fill up rapidly and overflow instead of the reverse trend which has taken place since the advent of these drugs, especially the tranquilizers which appeared just a few years ago.

Take away all the vaccines, sera, toxoids, and other biological products, as well as all organic and inorganic drugs. Remove all the health information disseminated by Pharmacy. Remove all the pharmaceutical associations, all the literature, every vestige of the profession. Think what would happen if the preventatives, diagnostic and therapeutic tools, and all the information concerning them now made available to physicians by Pharmacy suddenly disappeared and were no longer obtainable. Think along these lines, and we soon begin to realize why we should have such pride in the efficiency and the success of the modern medical practitioner. Even surgery and psychiatry owe much of their success to drugs such as antibiotics and tranquilizers.

If Pharmacy were totally removed from the world, the result would be as devastating as thousands of H-bombs. Industry would wither away. The comparatively few human beings finally surviving on this planet would deteriorate into spiritless, bedraggled creatures who would gradually become more and more animal-like in appearance and intellect. Life would become short and difficult for those unfortunate enough to survive at birth.

What Will Happen?

Fortunately, no such catastrophe appears to be even a remote possibility. In the foreseeable future, Pharmacy will continue to provide even more specific, more potent medication to prolong life and to make it more pleasant and productive. Even better drugs are on the way for the treatment of cancer, heart disease, tuberculosis, and many other afflictions of man.

Straight from Headquarters

Robert P. Fischelis, Secretary

American Pharmaceutical Association Files *Amicus Curiae* Brief in Cutter Case

Because of the possible far-reaching effect of the decision of the Court in the damage suits brought against Cutter Laboratories in connection with their poliomyelitis vaccine, the AMERICAN PHARMACEUTICAL ASSOCIATION asked, and was granted permission by the Court, to enter a brief as a Friend of the Court (*Amicus Curiae*), in support of the Cutter Laboratories appeal. The following statement is taken from the conclusions recorded in the ASSOCIATION's brief.

On January 17, 1958, a jury, after hearing evidence for almost a two-month period, awarded two plaintiffs verdicts against Cutter Laboratories aggregating $147,000, based upon the plaintiffs' having used the defendant's vaccine, and thereafter having incurred poliomyelitis.

In arriving at its findings, the jury took the unusual action of informing the Court that it (the jury) had concluded: "The defendant, Cutter Laboratories, was not negligent either directly or by inference in producing and selling poliomyelitis vaccine under conditions prevailing at the time of the Cutter incident." The jury then indicated that they had no alternative but to find for the plaintiffs on the count of warranty.

Attorneys for the AMERICAN PHARMACEUTICAL ASSOCIATION have taken the position that the doctrine of implied warranty is not applicable to pharmaceuticals and biologicals dispensed solely upon prescription by qualified physicians.

The APhA attorneys took the further position that the trial court committed prejudicial error in refusing the defendant's requested instruction that a few individuals may be peculiarly susceptible or sensitive to certain drugs while many others would benefit from the same drugs without untoward effects.

In its conclusions, the brief of the AMERICAN PHARMACEUTICAL ASSOCIATION pointed out that in the past twenty-five years there have been enormous advances in research, manufacture, and distribution of pharmaceutical and biological products, and further, these products have been made available to the general public in the relentless fight against disease with unprecedented speed. Since World War II, the pharmaceutical industry has undoubtedly contributed more new products to the fight against disease than were made in the preceding half century.

These technological advances have in a very real sense subjected the pharmaceutical industry to the danger of becoming the victim of its own excellence.

An accommodation of two understandable but conflicting social policies is required for an effective settlement of the basic issues involved in this case. The first is the policy of imposing absolute liability in the first instance on manufacturers and sellers. The advocates of this unlimited liability policy have apparently lost sight of the fact that fantastic cost of such a policy would eventually be borne by the public and the net result would be the denial of modern medicines and drugs to a substantial portion of the general public.

The other policy favors the continued introduction of new lifesaving products and procedures without inhibiting scientific progress. Many of the new products coming onto the market involve manufacturing and testing techniques of incredible complexity. They are constantly subject to change and improvement as scientific research pushes back the borders of the unknown. To withhold the benefit of new discoveries from the public over years of precautionary testing would certainly be no service to society. The development or use of new preventive and curative agents cannot be expected to combine absolute efficacy and safety in the first instance. If such a requirement is imposed, no manufacturer, physician, pharmacist, or hospital can afford to risk manufacturing, prescribing, or dispensing the lifesaving pharmaceutical or biological products which in the vast majority of instances would be a boon to the health of mankind, but nevertheless capable of severe injury in the unknown situation.

In the field of preventive medicine, the introduction of any new pharmaceutical or biological product, whether it is to be administered to a small number of individual patients or for mass inoculations, requires careful consideration of many factors. Paramount consideration must be given to the efficacy and safety of the agent. However, further consideration must also be given to the problems of dosage, method of administration and the possibility of undesirable reactions in the patients. These problems and the risks entailed must be weighed against the seriousness of the disease and in the final analysis the decision to employ the agent rests upon the physician. The Salk vaccination program against paralytic poliomyelitis presented all of the aforementioned problems as well as some unanticipated situations.

The unfortunate response in a small percentage of the individuals inoculated with the poliomyelitis

vaccine was essentially unanticipated. Although some inevitable risk may be inherent in using any pharmaceutical or biological products, the advantages of their use far outweigh any possible disadvantages. Such products as the antibiotics have not been proved absolutely safe. Dr. Albert H. Holland, Jr., speaking on the question of reactions following clinical use of antibiotics, stated, "Other than the selection of an effective antibiotic agent for the patient, the doctor's greatest concern is with the serious reactions, particularly those that are anaphylactoid in nature." It would seem unrealistic and unreasonable that these antibiotic products which have saved so many lives and alleviated so much suffering should be removed from circulation until there are no unknown and untoward effects from their use.

The American pharmaceutical industry does not seek to disclaim liability which might result from a negligently manufactured product. However, we take the position that a manufacturer who has complied with all government regulations and standards in accordance with the best scientific and productive knowledge then available, and who is absolved of any negligence by a jury, should not be held accountable under a doctrine of absolute liability.

Pharmacy United

When one reads editorial expressions in some contemporary pharmaceutical publications it is easy to gain the impression that Pharmacy never speaks adequately for itself and that the most important problem before the profession is to eliminate the voices which speak for the specialized functions of Pharmacy and substitute "one voice" to speak for everybody.

Such editorial expressions may be due to gross ignorance of what is going on in the world in general or wishful thinking on the superiority of centralized authority over the democratic process.

Just because two national organizations in the pharmaceutical manufacturing area found it advisable to merge, and thus eliminate duplication of function and expense of representation in that area, is no reason for advocating the merger of other national organizations in the profession or industry which have clearly defined, nonconflicting functions involving no duplication of effort and requiring specialized representation.

American pharmacists who believed in the value of organized effort to enhance their professional services to the public by fostering high standards of quality for drugs, developing a satisfactory program of education and licensure for practitioners, promoting high ethical standards of practice, and creating media for the publication of the results of scientific research and the expression of professional points of view, were responsible for the organization of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Since 1852 this ASSOCIATION has been the effective spokesman of the individual practitioner of Pharmacy regardless of his field of specialization. Being the first national pharmaceutical association in the United States, it encouraged self expression on the part of its members and assisted in the formation of specialized groups which could function in exclusive fields of essential service within the profession and the pharmaceutical industry and assist more effectively in the development of such specialties.

Thus in a most democratic way, the AMERICAN PHARMACEUTICAL ASSOCIATION has fostered specialization, while retaining the function of developing Pharmacy as a whole, without reference to vested interests.

The very fact that other professional sócieties in related fields, governmental agencies and lay groups within the voluntary health organization movement look upon the APhA as representing the broader aspects of Pharmacy indicates how much this organization serves the profession as a whole.

Those who give the necessary thought to what goes on in human affairs in this day and generation find it unnecessary to question who speaks for what in American Pharmacy. We need an interchange of information and views between the specialized groups in American Pharmacy today more than ever before. This is not for the purpose of stifling self expression but rather for enhancing it. However, self expression should be indulged in with the idea of making a contribution to composite thinking and sensible action which takes into consideration that our problems do not necessarily have but one arbitrary solution.

The United States is still a federation of states with many isolated, peculiar, and sometimes difficult local problems to meet.

We have the media for expression, the organizational structures for carrying out the will of the majority and the machinery for bringing about cooperative action when this is desirable.

Too often, those who are in charge of the management of organizations and, even more often, those who make up these organizations fail to recognize that Pharmacy united, with respect to objectives, ethics, and services to society, does not mean that there must be an absolute merging of views as to the details and the extent to which objectives need to be carried out in any given set of circumstances. It is much more important that we all travel in the same direction than that we all use the same road.

Selective Service Act to be Extended

The Department of Defense has introduced legislation (H.R. 2260) for continuation of the authority to induct persons under the Selective Service Act as well as to make special calls for physicians and dentists. Under the present law, which expires June 30, men are eligible for induction between age $18\frac{1}{2}$ and 26, or until 35, if deferred for any reason. The average age of inductees now is 23.

The United States Chamber of Commerce is advocating induction of a larger proportion of men between the ages of $18\frac{1}{2}$ and $21\frac{1}{2}$ in order to "sharpen up the Armed Services, cut costly turnover of manpower and benefit draftees." This proposal does not have the approval of the Director of Selective Service.

The Committee on National Defense and Security of the APhA is giving consideration to this question and solicits the point of view of practitioners as well as students of pharmacy on the subject. Please send your comment to the Secretary of the ASSOCIATION.

Pharmacy among the

Apache Indians

*by Harold L. Eichler, B.S.**

Two Apache children, one on a cradle board, in front of Public Health Service Indian Hospital, Whiteriver, Ariz.

On July 1, 1957, the U.S. Public Health Service sent a pharmacist to the Indian hospital at Whiteriver, Arizona, to establish the first hospital pharmacy on the Fort Apache Indian Reservation.

The Fort Apache Indian Reservation consists of about 2,700 square miles with a population of approximately 4,000 Apaches. They live for the most part in poverty. Their dwellings are mainly wikiups—that is, wigwam-type dwellings which, instead of being covered with animal skins, are covered with leaves and twigs. They have to haul their water from streams or obtain it from faucets in the town of Whiteriver. At the mountain community of Whiteriver are located the headquarters of the Fort Apache Agency of the Bureau of Indian Affairs, as well as the Public Health Service Indian Hospital and the Apache Tribal Office.

The Apaches live simply and traditionally. The women wear long camp dresses with skirts that touch the floor and blouses that are never tucked in, giving the clothing the appearance of maternity dresses. They still carry their babies papoose-style in cradle boards. Most of the people, including young children, speak the Apache language; English is largely foreign to them. Just as the names "Jones" and "Smith" are common to many Americans, the names of "Altaha" (ah-l-ta-ha), "Ethelbah," "Cosay," and "Alchesay" are the most common Apache names. One of the Apaches' few concessions to modern ways is their use of pick-up trucks which enable them to carry wood for the winter, store water in drums, and travel around the rough country.

The hospital itself has 38 beds and serves anywhere from 1,200 to 1,400 patients monthly in the outpatient clinic. There are 3 doctors and 11 nursing personnel, including 6 R.N.'s. No major surgery is done here; surgical patients are transported to the Public Health Service Indian Hospital at Phoenix, which is the facility equipped to handle such cases for this area.

The first requisite in the establishment of a pharmacy was to find the space for it—not an easy task in the old hospital building. This was solved by taking over two rooms near the front entrance, knocking down part of the wall separating the rooms, and ending up with one large area suitable for the pharmacy.

The next problem was to consolidate all of the drugs throughout the hospital into the pharmacy and its storeroom, and to take inventory. In the Public Health Service the KARDEX type of perpetual inventory is used. If properly recorded, it provides the following information at a glance:

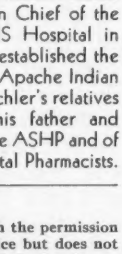
1. Amount of each item on hand
2. Cost per unit
3. Amount used in previous month (or other period of time)
4. When the item was last ordered
5. When the drug was received
6. From whom purchased
7. In what bulk it was purchased (10's, 25's, gallons, etc.).

The advantages of such a system are readily apparent, and it can be recommended both for hospitals (Government as well as private) which do not already use an inventory system, and for retail pharmacies.

What changes have occurred since the pharmicist became a member of the hospital staff? Stated another way, how has establishment of a pharmacy benefited the Indians?

The first, and perhaps most important result is improved patient care by the doctor and nurses. The doctors now have more time to devote to the sick because they no longer have to dispense medicines. It follows, then, that the second advantage of having a pharmacist on the staff is the decrease in waiting time by the patients in the clinic.

Another advantage is less apparent but nonetheless important. The Apaches now see a new member of the health team—the pharmacist. This enhances their belief that the Government is doing all it can within available resources to improve medical services. They gain additional confidence in the hospital and its staff, and more Apaches



HAROLD L. EICHLER was graduated from the Brooklyn College of Pharmacy in 1954. He was employed for 18 months as Assistant Chief Pharmacist at Wyckoff Heights Hospital, Brooklyn. In 1956, he received a commission in the U.S. Public Health Service and subsequently was assigned to the Division of Indian Health. Since July 1957 he has been Chief of the Pharmacy Service at the PHS Hospital in Whiteriver, Ariz., where he established the first hospital pharmacy on the Apache Indian Reservation. Seven of Mr. Eichler's relatives are pharmacists, including his father and brother. He is a member of the ASHP and of the Arizona Society of Hospital Pharmacists.

* This article is published with the permission of the U.S. Public Health Service but does not necessarily represent the views of the Service.

now come to the hospital and clinic for treatment and health services.

"A piece of paper" (the prescription) serves to boost the Apache's prestige and morale. The patient presents it to the pharmacist, who then fills the prescription. The pharmacist calls out the patient's name, and the latter steps up to the counter and hears the directions repeated. He is being treated just like an ordinary person who goes to his private physician, and he likes it.

How do the Apache Indians differ in their disease rate as compared to the white man? An enigma among these Indians is that while they have a normal percentage of high blood pressure, they almost never suffer coronary artery attacks. Reserpine, 0.25 mg. twice daily, is very effective for hypertension here. A blood pressure of 240/150 was reduced to 150/80 in about 2 months just by using this drug alone. Arteriosclerosis is rare, and I have seen on autopsy the heart of a 66-year-old woman whose aorta was as supple and pliable as that of a young child.

Infectious diseases such as influenza, tuberculosis, and gonorrhea attack these Indians very hard and often. In the October, 1957 recent influenza epidemic, a great majority of Apaches contacted the infection, whereas the white man here was barely touched. This is probably due to the difference in living standards of the two peoples.

Fewer allergic reactions from drugs occur among the Apaches. Whereas the incidence of penicillin reaction among Americans is about 1%, it appears to be much less here, although no percentage figures are available. Allergic dermatitis reactions to such drugs as nitrofurazone and sulfas are rare, although dermatitis of other types is common.

Indians in general (and this includes the Apaches) are uncommonly stoical; they do not betray as much overt emotion as we are accustomed to observing. Their family ties are unusually strong. If a loved one is dying, members of the family will stay by the room all day and at night, sleeping on the floor if necessary. Food is usually brought to them, and their vigil does not cease until the patient is out of danger or dead.

The old-time Apaches still believe that if twins are born, it is a bad omen. Formerly the parents would kill the second born, but today they usually will give it away to a mission. Probably the origin of this belief lies in the custom of breast feeding; the mother does not have enough milk for two, the Apaches think, so that both babies may become emaciated and die or the mother may become ill.

Another oddity is the fact that if the mother dies as a result of childbirth, the in-laws usually give the baby away, preferably to a mission.

The Public Health Service provides the latest drugs and uses the finest products obtainable, but what happens after the drugs are dispensed is another matter. For instance, it is rumored that aspirins find their way into Apache home brew so that headaches are averted. Directions are not always followed closely either. A prescription for a well-known proprietary cough syrup, to be taken 1 teaspoonful 4 times daily and dispensed in a two-ounce bottle, was brought back for a refill the next day with the explanation "It was good so I drank it up." According to local gossip, the same cough preparation is reputed to be excellent as a pancake syrup.

Most of the Apaches get "shots" when they're sick. These may include procaine penicillin, benzathine penicillin G, dihydrostreptomycin-penicillin G procaine, and others, which may be followed up by supplementary oral medication. An Apache believes that a "shot" cures all, and he is likely to be disappointed if he is not given one when he thinks he needs medication.

Frequently an Apache will throw away his oral medication after the first dose or so. One school girl did not come back to renew her anticonvulsant medication until after she had had an epileptic seizure. The school nurse at the Whiteriver Public School came to the pharmacy one morning to request medication that was supposed to be given to a boy pupil for "athlete's foot." When I showed her the filled prescriptions in my files, she replied, "I'll probably find them on the path when I walk back."

In general, the Indians hold any white man in the hospital in esteem, and they frequently call the pharmacist "Doctor." An Indian man who four days earlier had come in all battered and bloody, and in need of stitches of his face, came into the pharmacy recently. Although he knew that I was not a doctor, he asked me to remove his stitches because "I'm in a hurry and can't wait in the clinic."

Probably the biggest medical problem is "diarrhea." This is especially aggravated during the summer months, not only because Apaches drink contaminated river water, but also because they have no refrigeration and foods spoil quickly. It is tragic when they bring in their babies almost dehydrated after a severe bout of diarrhea. This is the time when we are using iv fluids almost continuously. Most often prescribed for babies with this condition is dextrose $2^1/_2\%$ in $^1/_2$ strength lactated ringers solution with supplementary potassium added.

Other problems are infectious hepatitis, which is endemic to this area. We usually keep a big stock of poliomyelitis immune globulin (gamma globulin) on hand to combat this disease.

Trachoma, which is a medical rarity in most parts of the country, is prevalent here. This is usually treated with a 21-day supply of triple sulfa 0.5 gm. tablets orally (or the new sulfa—Gulfamethoxypyridazine, (Kynex, Midicel)) plus oxytetracycline ophthalmic ointment.

The winter season brings its own special problems due mainly to the housing situation. As the Apaches live in wikiups which are poorly heated and drafty, many cases of pneumonia occur. The high incidence of burn cases is peculiar to this region. To keep warm in the winter, an Apache lights a fire in the middle of the wikiup, letting the smoke pass out through the top. When the family goes to sleep, one of its members may toss and turn into the fire itself. A not unusual case involved a man who brought his mother (about 60 years old) to the hospital to be treated for a "cold." Upon examination, the medical officer found extensive third degree burns on her back. It developed that during the previous night she had fallen into the fire in her sleep.

The other type of burn case results from the unique Apache way of attempting or committing suicide. In our society some common methods are the taking of drugs in toxic proportions, falls from great heights, or drowning. These Indians either jump into a fire or douse themselves with kerosene and set themselves up as a human torch. Needless to say, these burns are almost invariably fatal. By contrast, rarely if ever does an Apache try to commit suicide by taking an overdose of sedatives or other drugs.

Another medical problem is caused by the use of "cradle boards." The cradle board is used to carry the baby on the mother's back "papoose style." The baby is strapped mummy-style with its hands secured, and carried from place to place or left in the wikiup on the cradle board. This has the advantage that the baby cannot move around and thus fall into the fire while in the house. Or, if the parents see a black widow spider or scorpion (very prevalent here) headed toward the baby, all they do is lift the board (and baby) out of the way. But to the Public Health Service physician, use of the cradle board has some major disadvantages. If the baby runs a fever, the tight bundling of the blankets around its body does not allow the heat to dissipate, thus either increasing the temperature or not permitting a true reading or both. The baby may regurgitate and, in a prone position unable to move, is more likely to aspirate its own vomitus. This usually results in a fatal pneumonia or suffocation. Of course, the baby urinates on

the cradle board, and may defecate in it. While the mother may remove the stool, the cradle board itself is never washed.

There is a high incidence of skin conditions, especially around the face. This is mostly due to the lack of cleanliness. If a child's nose is running, he either leaves it alone or he takes his hand and rubs it off, or uses his clothes. A large amount of nitrofurazone (Furacin) or bacitracin ointment is prescribed to treat the resulting skin conditions.

A big problem in the hospital itself during clinic hours is how to teach patients to cover their mouths when they cough. It is not at all unusual to see a child coughing and the mother not saying a word in admonition.

A health educator has been added to the hospital staff because we realize that public health procedures require as much or more effort to prevent disease as to treat when it occurs. Gradually, as the hospital staff expands, the Apaches are coming to realize that we are here to help them, and they respond by coming in to be treated in even greater numbers than before. On January 23, 1958, we filled 90 prescriptions for the outpatient department, the highest daily load to date. It was possible for one pharmacist to accomplish this amount of work due to our emphasis on prepackaging during nonclinic hours and in spare time.

The male, female, and pediatric wards use one combined nursing station, whose director sends a basket to be filled with drugs by the pharmacist three times weekly.

The hospital has a Pharmacy and Therapeutics Committee which adds or deletes items in the Area Formulary according to our individual needs. The Area Formulary serves the Phoenix Indian Health Area which includes the Indian hospital at Whiteriver, most of Arizona, (except the Navajo Reservation), Nevada, parts of Utah, and California. An Area Pharmacy Officer stationed in Phoenix coordinates the activities of those hospitals which have pharmacists, as well as the pharmaceutical activities of all Area installations. All drug requisitions are channeled to the Area Pharmacy Officer.

The Public Health Service is able to obtain pharmacists for the Indian health program through its corps of commissioned officers which is somewhat comparable to the commissioned officer system of the Armed Forces. While serving their country, these officers also fulfill their Selective Service obligations.

The traditional Apache word of welcome is HON-DA. If you ever come out to Fort Apache Indian Reservation, you are HON-DA to visit at Whiteriver the first hospital pharmacy to be established among the Apache Indians. ■

AAAS Pharmacy Section Meeting

Pharmacy Section Np held eight sessions December 26 through December 29 in Washington, D.C., according to Dr. John E. Christian, Secretary of the Section. A total of thirty contributed papers on original studies was reported and two symposia were held. Over two hundred and fifty persons registered as having attended one or more of the Pharmacy Section meetings.

The AAAS Council, the governing body of the Association, elected Dr. Glenn L. Jenkins, Dean, School of Pharmacy, Purdue University, as a Vice President of the Association and elected Dr. John Autian, School of Pharmacy, University of Michigan, to serve on the Committee-at-Large of the Section for a four-year term. Dean Jenkins will serve as Chairman of the Section for the coming year and will preside at the Chicago meeting.

Of major interest to the group in attendance was a most stimulating address on "The AAAS and Pharmacy" presented by Dr. George Archambault, vice president. Dr. Archambault set forth the major objectives of the Section as follows:

(1) To promote and encourage scientific advancement in the pharmaceutical sciences along with and as a part of the general scientific progress of the Nation.

(2) To secure a more widespread recognition of our profession as a science in meeting with other scientific disciplines.

(3) To provide a meeting ground for individual recognition of pharmaceutical scientists by other scientists of the Nation.

Dr. Archambault stated, "I have strong hopes that through this Section, researchers in the pharmaceutical industry will release some of their more important 'break-through' research papers, especially those concerned with the introduction of new drugs."

A symposium on "Advances in Conquering Cancer" attracted considerable interest outside the pharmaceutical scientists in attendance. Dr. Stuart Sessoms, Assistant Director of the National Cancer Institute, gave an introduction to the problem and served as the presiding officer over the session. Dr. T. Phillip Waalkes, Special Assistant to the Chief, National Cancer Chemotherapy Center, National Cancer Institute, gave a review of promising drugs in this field, and Dr. Milton Skolaut, Chief, Pharmacy Department, Clinical Center NIH, discussed the impact of cancer research on the hospital pharmacy program. Dr. Roderick Murray, Director, Division of Biologic Standards, NIH, spoke on the function and responsibility of the Division of Biologic Standards of the National Institutes of Health. This program was followed by a tour of the Pharmacy Department of NIH.

In addition to the above-mentioned program, the hospital pharmacy group had a most informative and well attended full-day session under the guidance of Dr. G. F. Archambault and J. A. Oddis. The following organizations were represented: American Society of Hospital Pharmacists, AMERICAN PHARMACEUTICAL ASSOCIATION, Maryland Association of Hospital Pharmacists, District of Columbia Pharmaceutical Association, American Hospital Association, Howard University, and George Washington University. Several important subjects of direct interest were discussed, including a fluid form of meprobamate, research potential in hospital pharmacy, and statistics as a research tool. A symposium on the hospital pharmacist of the future included the following participants: William S. Apple, Charles U. Letourneau, Charles W. Bliven, Kenneth Nelson, and Joseph A. Oddis. Luncheon, entertainment, and dinner were sponsored by E. R. Squibb & Sons, Mead Johnson and Company, and McKesson and Robbins, Inc., respectively.

Dr. Justin L. Powers, Editor, *Scientific Edition, Journal of the American Pharmaceutical Association*, opened the contributed papers sessions which consisted of the presentation of the results of original research. The papers presented were of unusual merit. Dr. Joseph V. Swintosky and co-workers at the Smith Kline and French Laboratories in Philadelphia presented a series of three papers dealing with the problems of sustained release medication. The effect of orally administered thiourea in rats was discussed by Dr. A. H. McCreesh of Temple University. Dr. A. G. Roberts, J. B. Roerig & Company, presented a paper on the pharmacological prediction of hydroxyzine hydrochloride activity. W. J. O'Malley, Medical College of Virginia, and J. E. Christian, Purdue University, discussed the design of a continuous recording *in vivo* method of measuring sensible perspiration. Methods of determining compression characteristics of materials as an aid to tablet formulation were presented by Dr. L. L. Kaplan and Dr. J. E. Wolff of the Sterling Winthrop Research Institute. Dr. J. J. Sciarra, St. John's University, discussed the solubility of boric acid solutions and a qualitative analytical procedure for borates.

The sessions ended with an evening tour of the American Institute of Pharmacy which serves as the Headquarters of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Incorporation of water using

lantrol in pharmaceuticals

by Marvin M. Malmberg, M.S.
Muriel C. Vincent, Ph.D.*

LANOLIN has long been employed in the preparation of ointments and lotions due to its properties of water absorption and stability; however, only recently has a liquid lanolin been introduced. This liquid preparation, Lantrol, retains all the desirable properties of lanolin but differs from lanolin in that the higher fatty esters of wool fat have been separated from the liquid esters.

The absorption of water by ointment bases has been studied by incorporating water into the bases at room temperature, cooling the bases and calculating the amount of water retained[1,2].

In the present series of experiments various ointment bases containing Lantrol were formulated in order to develop a suitable base into which medicinal agents could be incorporated and later released to the skin for their therapeutic effects.

[1] Halpern, A., and Zopf, L. C., THIS JOURNAL, 36, 101 (1947).
[2] Casparis, P., and Meyer, E. W., *Pharm. Acta Helv.*, 10, 163 (1935).

MARVIN M. MALMBERG, Director of Personnel and Pharmacy Service in the new Saint Ansgar Hospital at Moorhead, Minnesota, received his B.S. degree in Pharmacy and his M.S. degree in Hospital Pharmacy at North Dakota Agricultural College School of Pharmacy. While working on his master's degree, Mr. Malmberg interned in three hospitals and received the Pfizer Scholarship in Hospital Pharmacy.

Table I—Absorption of Water by Modifications of Hydrophilic Petrolatum

Ointment	Ingredients, %					Water absorption %
	Cholesterol	*Stearyl Alcohol*	*White Wax*	*Lantrol*	*White Petrolatum*	
Hydrophilic Petrolatum	3	3	8	0	86	67
Modification #1	0	3	8	3	86	122
Modification #2	3	0	8	3	86	199
Modification #3	3	3	8	3	83	101
Modification #4	0	0	8	3	89	21
Modification #5	0	3	0	0	97	45
Modification #6	0	0	0	3	97	46
Modification #7	0	3	0	3	94	60
Modification #8	3	3	0	0	94	59
Modification #9	3	0	0	3	94	200
Modification #10	3	3	0	3	91	122

Incorporation of Water into Lantrol Ointment Bases

A series of modifications of hydrophilic petrolatum USP were prepared into which varying percentages of Lantrol were incorporated. The water absorptive ability of these products was then tested by buret measurement.

Buret method of determining water absorption—A 5-Gm. sample of the ointment was placed on an ointment slab and distilled water added to it from a 5-ml. buret graduated in 0.01 ml. Distilled water was added slowly and worked into the ointment with a spatula until water was no longer absorbed.

Ointment series—In the first series of ointments prepared, Table IV, variations in the formula of hydrophilic petrolatum

* Presented to the Section on Practical Pharmacy, APhA Los Angeles Convention. April,1958.

The authors wish to thank the following companies for supplying materials used in this investigation: Malmstrom Chemical Corp. (Lantrol); Abbott Laboratories (butacaine sulfate); Ciba Pharmaceutical Products (dibucaine hydrochloride); Eli Lilly & Co. (cyclomethycaine sulfate, piperocaine hydrochloride); Winthrop Laboratories (tetracaine hydrochloride).

[3] Christensen, B. V., and Tye, A., THIS JOURNAL, 40, 404(1951).
[4] Mack, W. L., Nelson, J. W., and Guth, E. P., *ibid.*, 42, 103(1953).

were made by altering the amounts of cholesterol, stearyl alcohol, and white wax and by incorporating Lantrol into the product.

In the second series of ointments, Table II, 1–15% Lantrol was incorporated into white petrolatum. A 9% concentration of Lantrol in white petrolatum gave maximum water absorption.

With the third series of ointments, Table II, 1–15% stearyl alcohol was incorporated into white petrolatum. A 6% concentration of stearyl alcohol in white petrolatum gave maximum water absorption.

In the fourth series of ointments, Table II, 1–9% cholesterol was incorporated into white petrolatum. Maximum absorption of water occurred with the ointment base containing 7% cholesterol.

The fifth series of ointments, Table III, was composed of 36 ointments containing from 1–3% stearyl alcohol and from 1–15% Lantrol in white petrolatum. The preparation containing 2% stearyl alcohol and 8% Lantrol produced the maximum absorption of water.

Thirty-six ointments were prepared for the sixth series of ointments, Table III. These preparations contained from 1–3% cholesterol and from 1–15% Lantrol in white petrolatum. The ointment containing 2% cholesterol and 6% Lantrol produced the maximum absorption of water.

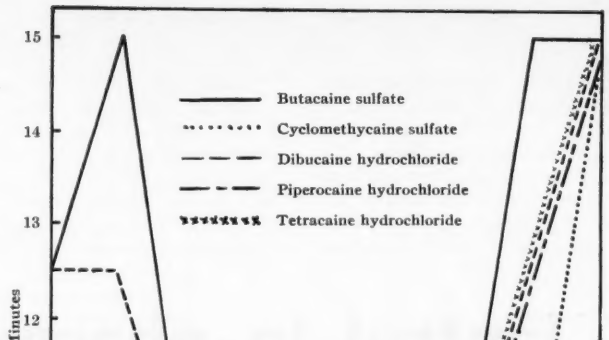


Fig. 1—Rate of release of local anesthetics, 1%

Release of Local Anesthetics from Lantrol Ointment Bases

The effectiveness of local anesthetics was tested by noting the wink reflex after an anesthetic solution has been applied to the cornea of a rabbit, by noting the extent of a wheal resulting from an intradermal injection of anesthetic, and by noting the pain threshold to heat after anesthetic has been applied to the tail of a rat. The latter method was used to evaluate the action of local anesthetics in ointments.[3,4,5]

For the experiments described here, local anesthetics in concentrations of 1% and 2% were incorporated into ointment bases which exhibited high water absorbability.[6] The procedure for determining the release of the anesthetics from the ointments employed the use of a fine copper wire which was forced against the skin of test individuals.

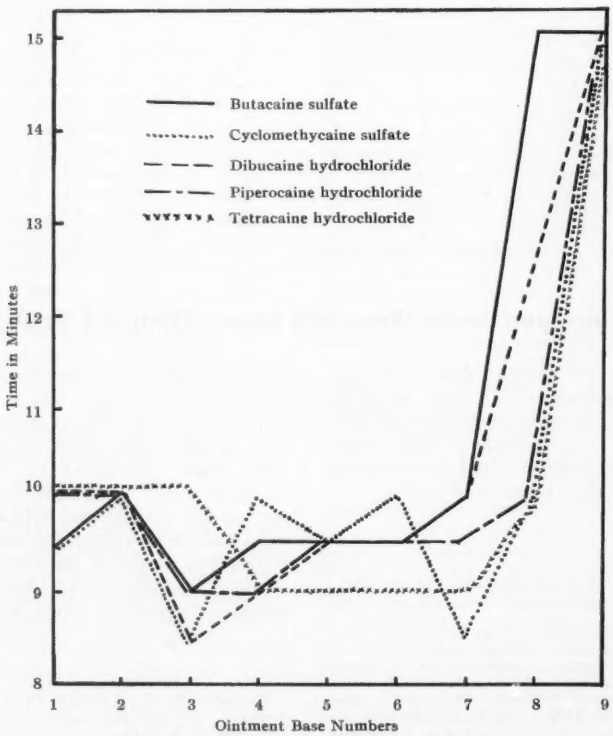


Fig. 2—Rate of release of local anesthetics, 2%

[5] Brockmeyer, E. W., and Guth, E. P., *ibid.*, **44**, 706(1955).

[6] Malmberg, M. M., and Vincent, M. C., (previous paper).

DR. MURIEL C. VINCENT, Professor of Pharmacy at the North Dakota Agricultural College School of Pharmacy, received her B.S. degree from Oregon State College and her M.S. and Ph.D. degrees from the University of Washington. She taught at Oregon State College before she began teaching at North Dakota Agricultural College.

Table II—Absorption of Water by Ointment Constituents in White Petrolatum

Concn. %	1	2	3	4	5	6	7	8	9	10	12.5	15
% Water absorption by Lantrol	23.0	32.6	45.6	51.8	59.8	69.2	117.8	120.8	150.8	139.8	130.6	126.2
% Water absorption by stearyl alcohol	35.0	39.0	44.8	49.2	50.2	51.0	45.2	43.0	41.8	41.0	38.6	36.2
% Water absorption by cholesterol	21.1	25.0	28.0	30.2	32.4	34.0	35.0	33.6	32.6			

Experimental

Nine ointment bases were prepared by incorporating Lantrol, stearyl alcohol, and cholesterl in white petrolatum, Table I. The local anesthetics butacaine sulfate, cyclomethycaine sulfate, dibucaine hydrochloride, piperocaine hydrochloride and tetracaine hydrochloride were added to the bases in concentrations of 1% and 2%.

A small amount of the ointment was rubbed onto the skin at the wrists and antecubitals of each volunteer. Each ointment was applied to two different individuals. A fine piece of copper wire was used to stimulate the site at which the anesthetic ointments were applied. In order to insure that the stimulus was the same in each case, the wire was forced against the skin until a slight bend was noted in the wire. Each site was tested at one minute intervals for 10 minutes and again at 15 minutes. A placebo was also applied to each person. A total of 10 individuals participated in the tests.

Table I—Composition of White Petrolatum Ointment Bases

Base Number	Lantrol %	Cholesterol %	Stearyl Alcohol %
1	8	1	0
2	6	2	0
3	6	3	0
4	9	0	1
5	8	0	2
6	8	0	3
7	9	0	0
8	0	0	6
9	0	7	0

The rates of release of the local anesthetics from the ointments are shown in Figs. 1 and 2. The effects of most of the ointments were noticed between 9 and 10 minutes. This was particularly true when 2% concentrations of the anesthetics were used with those ointment bases capable of absorbing large quantities of water. Doubtful values were noted at approximately 8 minutes.

Summary

1. Lantrol is capable of absorbing large quantities of water and of increasing absorption of water in hydrophilic ointment bases. Those ointments containing 2% steary alcohol and 8% Lantrol in white petrolatum and 2% cholesterol and 6% Lantrol in white petrolatum provided maximum water absorption.

2. The release of butacaine sulfate, cyclomethycaine sulfate, dibucaine hydrochloride, piperocaine hydrochloride, and tetracaine hydrochloride from a number of ointment bases has been tested. Those ointment bases containing Lantrol which are able to absorb water in high concentrations liberated the anesthetic in 9 to 10 minutes after the ointment was applied to the skin. It would therefore seem advantageous to incorporate Lantrol into ointment bases where a more rapid effect of the medication is desired.

Table III—Absorption of Water by Ointment Constituents in White Petrolatum

% Lantrol	1	2	3	4	5	6	7	8	9	10	12.5	15
Stearyl Alcohol												
1%	34.2	40.0	47.4	51.0	62.0	88.0	149.2	176.0	213.4	212.6	185.6	176.2
2%	48.4	52.4	58.4	64.6	83.6	104.2	190.2	237.6	200.4	171.6	164.8	162.2
3%	51.6	57.8	60.2	67.6	78.0	118.6	169.8	206.4	161.8	157.8	150.8	148.6
Cholesterol												
1%	78.4	120.6	199.0	218.2	220.0	226.2	230.6	249.0	230.0	197.0	195.0	182.6
2%	138.4	198.2	228.2	240.0	276.2	320.0	318.2	302.6	299.2	294.4	291.2	280.8
3%	78.9	127.6	199.6	232.6	250.0	300.0	288.6	284.2	254.6	212.2	200.6	197.2

CANCER'S 7 DANGER SIGNALS

1 Unusual bleeding or discharge
2 A lump or thickening in the breast or elsewhere
3 A sore that does not heal
4 Change in bowel or bladder habits
5 Hoarseness or cough
6 Indigestion or difficulty in swallowing
7 Changes in wart or mole

If your signal lasts longer than two weeks, go to your doctor to learn if it means cancer.

AMERICAN CANCER SOCIETY

Pharmaceutical Womanpower

In 1951 Kappa Epsilon, a national professional fraternity for women in Pharmacy, published the first booklet to describe the role of women in Pharmacy. "Women in Pharmacy" was so well received that the supply was soon exhausted. A new and enlarged booklet entitled "She Is a Pharmacist" has been written by Dr. Eunice Bonow, Assistant Professor of Pharmacy at the University of Wisconsin-Milwaukee, and has recently been published by Kappa Epsilon. "She Is a Pharmacist" relates the experiences of Elizabeth Doty, a high school senior, as she visits with Miss Brady, the owner of a community pharmacy; Mrs. Harimon of a prescription pharmacy; Miss Lunde, the chief pharmacist at City Hospital; Miss Randolph of the Pharmacal Laboratories, Inc.; Dr. June Whyte of the pharmacy faculty of the State University; Miss Kerns, a pharmacist-intern; and Mrs. Asbury, a relief pharmacist. To complete the account, a sketch of Elizabeth Marshall, who is believed to have been the first woman pharmacist in the United States, is included. "She Is a Pharmcist" is available from Dr. Eunice Bonow, 600 W. Kilbourn Ave., Milwaukee, 3, Wisconsin.

Dental use of

stannous fluoride

by Paul E. Norris, Ph.D.

For over ten years the use of a fluoride salt, applied topically to the teeth of children, has been accepted dental procedure for the partial prevention of caries. Prior to 1950, a 2% solution of sodium fluoride was the commonly used source of fluoride, but as a result of studies published during the past several years on the clinical effectiveness of stannous fluoride[1-7], there is a growing interest among practicing dentists and public health workers in the use of this compound.

Methods of Application

Clinical studies conducted by the Indiana University and the Indiana State Board of Health[1-3] have established that a single application of an 8% solution of stannous fluoride at 6-month intervals or at yearly intervals will reduce the incidence of dental caries in school children more effectively than the older method of applying a 2% sodium fluoride solution four times during a 10-day period.

As the application technique for sodium fluoride requires four visits to the dental office, it is more demanding on the patient and the parent, as well as the dentist's time, than the single visit required for the stannous fluoride treatment. Consequently, more practitioners are adopting the simpler procedure.

Following a thorough oral prophylaxis, the teeth are isolated by quadrants and thoroughly dried with air. The dried teeth are then kept wet with an 8% solution of stannous fluoride for 4 minutes. A cotton-tipped applicator is used to place the solution on the teeth, while the saliva is kept from the teeth throughout the application by the use of cotton rolls. After removal of the cotton rolls, the patient is allowed to expectorate until the saliva flow returns and is instructed not to eat or drink for one-half hour.

Preparation of an 8% Stannous Fluoride Solution—For ease and simplicity of preparation at the dental chair, 0.8 Gm. of stannous fluoride, previously weighed and placed in a #2 hard gelatin capsule, is emptied into 10 cc. of distilled water in a 25 cc. pyrex or plastic beaker or other suitable container. The plain end of an applicator stick can be used to stir the mixture to hasten solution. The freshly prepared solution may contain a small amount of finely-divided white stannous hydroxide, which is insoluble. The fine precipitate does not interfere with the effectiveness of the treatment.

Alternative Methods of Application of Stannous Fluoride to the Teeth—For the reasons discussed below, the chemical properties of stannous fluoride make it difficult to formulate a mouthwash that is not freshly prepared. As in the case of a dentifrice, some way of stabilizing the system may be developed.

Stannous fluoride has been successfully incorporated into a dentifrice and a half dozen separate clinical studies have verified that the compound will reduce caries significantly when used on a daily basis. Thus far, stannous fluoride is the only fluoride salt that has been proved to reduce caries under clinical conditions when used in a dentifrice.

Pharmaceutical Information

The chemical, stannous fluoride, is not generally available on the open market. As with most salts containing the lower valence form of metals, stannous fluoride has a certain degree of instability. The properties to be guarded against are:

1. Oxidation of the stannous ion to the stannic form, and
2. Hydrolysis of the compound by moisture to form the highly insoluble stannous hydroxide.

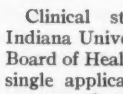
In the case of this particular salt, the anticariogenic activity of the fluoride ion is enhanced by the stannous ion, and both ions contribute to the clinical effectiveness of the compound. It has been established that participation of the stannous ion in the reaction with the dental enamel is one reason for the superior anticariogenic activity of this fluoride salt. Protection against oxidation is important because stannic fluoride is less effective than the stannous form. Prevention of hydrolysis is important because of the insolubility of stannous hydroxide and consequent removal of an active component of the system.

Pure stannous fluoride is freely soluble in water at the 8% level, but due to the slow hydrolysis of the stannous ion in aqueous solution, a fine white precipitate of stannous hydroxide will form as the solution ages, even though the pH is near 3.0.

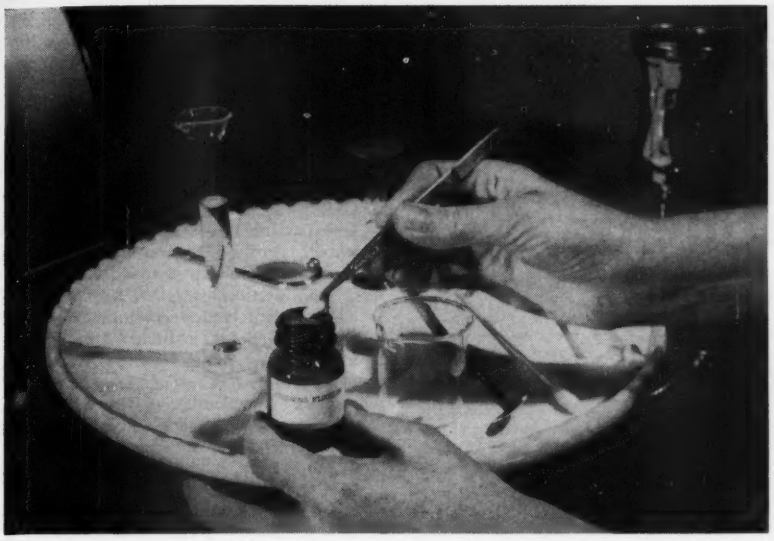
The two properties of the stannous ion, susceptibility to oxidation and to hydrolysis, require that the compound stannous fluoride be adequately protected during storage in tightly sealed containers. Because of the hydrolysis of stannous fluoride, only freshly prepared solution should be used for dental purposes and *stock solutions of stannous fluoride should not be prepared.*

Stannous fluoride should be handled in the open with a minimum of exposure and, except for the time necessary to weigh the compound and fill it into capsules, it should be kept in tightly sealed bottles. *Care in handling is particularly important in a humid atmosphere.*

Supply for Dental Use—At the present time stannous fluoride is available to dentists on request from the Indiana University School of Dentistry, Indianapolis, Ind. A 50-Gm. sample of the chemical is supplied gratis to dentists with instructions for use. For convenience at the dental chair, it is suggested that the material be divided into 0.8 Gm. quantities by a pharmacist and placed in #2 hard



DR. PAUL E. NORRIS, registered pharmacist in the State of Maryland, is now with the Toilet Goods Division of The Procter & Gamble Company. He received his Bachelor of Science (1941), Master of Science (1942), and Ph.D. (1951) degrees from the University of Michigan. Dr. Norris was on the University of Michigan faculty from 1948 to 1954 and has done dentifrice research for The Procter & Gamble Company for the past three years.



Dentist's Use of Encapsulated Stannous Fluoride

gelatin capsules for use by the dentist. The capsules should be stored in a tightly closed bottle until used. As described above, the contents of the capsule are emptied into distilled water to prepare the solution.

Toxicity

The ordinary fluoride salts are less toxic than many of the alkaloids used daily in proprietary products. For example, several Grams of sodium fluoride or stannous fluoride are necessary to cause death whereas as little as 0.05 Gm. of atropine may be fatal. As in the case of all physiologically-active agents, they must be used within a prescribed dosage range or under supervised conditions. For practical reasons, therefore, all applications of concentrated fluoride salt solutions to the teeth must be performed by a dentist, or where authorized by state law, by a dental hygienist.

The container for the capsules of stannous fluoride should be labeled "For Topical Applications Use."

A recent report by a pedodontist[8] concerning 10 years of unsupervised usage of a 0.25% sodium fluoride mouthwash by school age children revealed that no signs of toxicity were observed during the entire study. Other, shorter studies with fluoride mouthwashes have failed to produce any toxic reactions.

In many areas of the United States the natural fluoride content of the drinking water is from 2 to 10 times the 1 p.p.m. level of artificially fluoridated water supplies. The only physiological effect other than reduction of caries incidence is the mottling of permanent teeth in the 2 to 10 p.p.m. fluoride level areas. Thus, a cosmetic problem may result from the constant intake of high fluoride water during the formation of the permanent teeth in children. This problem is, of course, nonexistent in connection with the topical method of application.

Until recently there was some question of whether or not daily use of a dentifrice by children under 6 would lead to ingestion of sufficient fluoride to cause mottling (fluorosis) of the permanent teeth such as occurs in the naturally high fluoride water areas. Until this question could be resolved, the dentifrice on the market contained a caution against use by children under 6.

The urinary fluoride level of an individual is an indicator of fluoride intake; thus a study was conducted on children in a 1.1 ppm fluoride water area and a 0.1 ppm fluoride area with one group using a nonfluoride dentifrice and one group using a stannous fluoride dentifrice at each location.[9] Urinary excretion of fluoride remained constant over a 20-week period regardless of whether the children were using a stannous fluoride dentifrice or a nonfluoride dentifrice. These data show that no fluoride was ingested by children under 6 using a stannous fluoride dentifrice; or at least that so little was ingested that it could not be demonstrated. The method will detect a difference of as little as 1 ppm of fluoride in water intake, and children in communities with different fluoride water levels can be distinguished by their urinary fluoride level.

This evidence, showing that there is no increase in fluoride intake by children under 6 when using the stannous fluoride dentifrice, has led to removal of the restrictive labeling.

Bibliography

[1] Howell, C. L., Gish, C. W., Smiley, R. D., and Muhler, J. C., *J. Am. Dental Assoc.*, **50**, 14(1955).

[2] Gish, C. W., Howell, C. L., and Muhler, J. C., *J. Dental Research*, **36**, 784(1957).

[3] Gish, C. W., Howell, C. L., and Muhler, J. C., *J. Dent. Children*, **24**, 194(1957).

[4] McLaren, H. R., and Brown, H. K., *Can. J. Public Health*, **46**, 387(1955).

[5] Jordan, W. A., and Peterson, J. K., *J. Am. Dental Assoc.*, **54**, 589(1957).

[6] Muhler, J. C., Radike, A. W., Nebergall, W. H., and Day, H. G., *J. Dental Res.*, **33**, 609(1954); *J. Am. Dental Assoc.*, **50**, 163(1955).

[7] *Ibid.*, **35**, 49(1956); *Ibid.*, **55**, 196(1957).

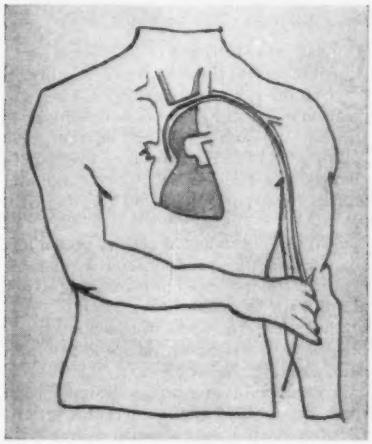
[8] Weisz, W. S., Annual Research and Award Address, Chicago Dental Society, Midwinter Meeting, February 5, 1958.

[9] Schweinsberger, R. A., and Muhler, J. C., *J. Pediat.*, **51**, 634(1957).

Your Heart in '59

The photo on the front cover, supplied by the Washington Heart Association, Inc., Washington, D.C., shows a physician describing catheterization of a heart to a group of high school students in the Nation's Capital. Dr. Werner Forssmann[1] received a share of the 1956 Nobel Prize for developing the procedure for introducing a catheter into the heart cavity.

By passing a fine catheter into the antecubital vein just in front of the left elbow and pushing it through the left inominate vein until it reaches the right side of the heart, oxygen tension and blood pressure can be measured. The information obtained enables heart specialists to discover heart defects such as openings in the walls separating the heart chambers.



Route of catheter into the heart

The Heart Fund supports education and research activities in the fight against cardiovascular disease. At least 10,000,000 persons in the United States suffer from some form of this disease, and the economic loss resulting from it in this country amounts to more than $36,000,000,000 a year. Diseases of the heart and blood vessels form the Nation's leading cause of death.

Not only has the Heart Fund created interest on the part of students in the health professions, but it has also accomplished much through its support:

1. Great strides have been made in heart surgery.
2. Rheumatic fever prevention is now possible so that rheumatic heart disease is frequently prevented.
3. Many cardiovascular disorders can now be cured.

[1] *Klinische Wochenschrift* **8**, 2085(1929).

Coal tar ointments

by J. C. King, M.S.

*and W. R. Lloyd, Ph.D.**

COAL TAR OINTMENT was first introduced into the NF VI as a mixture of 5% coal tar in zinc oxide paste. The composition of the ointment was unchanged in the NF VII and VIII, and in the USP XIII and XIV. The Revision Committee changed the formula to 3% coal tar and added 0.5% polysorbate 80 for the USP XV.

Coal tar ointment has always been a less than satisfactory product from a pharmaceutical standpoint. The color and texture are difficult to maintain consistently; it is unpleasant to the sense of touch when applied; and it is difficult to remove from the skin, clothing, and equipment.

A number of investigations have been made to rectify these objections. Synthetic coal tar mixtures and coal tar fractions have been devised which appear to eliminate some of the objections, [1–15] but these products have not been too well received by prescribing physicians. The addition of surface-active agents to the base has also been advocated.[16–19]

The objective of the present study was to determine the effect of a number of selected surface active agents incorporated into typical coal tar formulations on the pharmaceutical nature of the ointments and on the release of the coal tar from the base.

Experimental Materials

Polyoxyethylene sorbitan monolaurate (PSL)—A yellow, oily liquid, viscosity about 350 cps. at 25°C. Soluble in water, ethanol, and ethylene glycol. Insoluble in mineral oil and corn oil. HLB value 16.7.

Sorbitan monolaurate (SM)—A red amber, oily liquid, viscosity about 4500 cps. at 25°C. Soluble in ethanol, dispersable in water and soluble in mineral oil, corn oil, and ethylene glycol. HLB value 8.6.

Dioctyl sodium sulfosuccinate USP, (DSS)—A white, wax-like plastic solid. One Gm. dissolves slowly in 70 ml. of water. Freely soluble in alcohol and glycerin, very soluble in petroleum benzin.

Sodium lauryl sulfate USP, (SLS)—A white to light yellow crystalline material. One Gm. dissolves in 10 ml. of water forming an opalescent solution. HLB value 40.

Polyoxyethylene sorbitan monolaurate and sorbitan monolaurate (PSL/SM)—This combination of surface active agents was incorporated into the various bases at the 5% level only, but the proportion of PSL to SM was varied within the range of 30–70%. Such combinations are indicated as PSL 3/SM 7; PSL 7/SM 3, etc.

Polyoxyethylene sorbitan monooleate (polysorbate 80 USP), (PSO)—A lemon to amber colored, oily liquid. Soluble in water producing a nearly colorless solution. Soluble in alcohol, cottonseed oil, corn oil, ethyl acetate, methanol, and toluene. Insoluble in mineral oil and corn oil. Viscosity 350 cps. at 25°C. HLB value 15.

Coal tar oil (CTO)—The extracted coal tar used in this study was essentially the alcohol-soluble portion of Coal Tar Solution USP XV. Coal Tar Solution prepared according to the USP procedure was filtered through a sintered glass funnel of fine porosity, and the resulting solution evaporated at atmospheric pressure at a temperature of 80°C. From 1000 ml. the solution (200 Gm. of coal tar), 137 ml. of a dark amber colored liquid (Sp. Gr. 1.0) was

Table I—Inhibition (in mm.) of *Trichophyton mentagrophytes* by Coal Tar in Modified Hydrophilic Ointment Bases

Agent	PSL				PSL/SM 5%					DSS				SLS			
%	1	2	3	4	R	1	2	3	4	1	2	3	4	1	2	3	4
1	9	10	10	0	3/7	7	5	5	2	C	C	C	C	10	12	15	S
2	14	15	12	5	4/6	5	5	5	2	C	C	C	C	15	21	C	8
3	14	15	12	5	5/5	5	5	5	2	C	C	C	C	C	C	C	15
4	14	15	14	5	6/4	7				C	C	C	C	C	C	C	20
5	12	12	10	5	7/3	11	8			C	C	C	C	C	C	C	C

#1—coal tar, 3%; #2—coal tar 6 parts, polysorbate 80 1 part, 3%; #3—coal tar oil; #4—control; **S**—less than 1 mm.; **R**—ratio of PSL to SM; and **C**—complete inhibition

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*Presented to the Section on Practical Pharmacy, APhA, Los Angeles Convention, April 1958.

Abstracted from a thesis presented to the Graduate School of the University of Texas by J. C. King in partial fulfillment of the requirements for the Degree of Master of Science in Pharmacy.

[1] Goldstein, S. W., *Drug Standards*, **21**, 150 (1953).

[2] Hoysradt, G. F., Stoklosa, M. J., and Lynn, E. V., *Drug Standards*, **21**, 195(1953).

[3] Combes, F. C., *Ind. Med.*, **13**, 550(1944).

[4] Obermayer, M. E., and Becker, S. W., *Arch. Dermatol. and Syphilol.*, **31**, 796(1934).

[5] Downing, J. G., and Bauer, C. W., *ibid.*, **57**, 985(1948).

[6] DeMartin, I. N., and Cyr., G. N., *J. Am. Pharm. Assoc., Sci. Ed.*, **42**, 153(1953).

[7] Kerr, G. R., and Plein, E. M., *Drug Standards*, **21**, 10(1953).

[8] Abraham, H., *Asphalts and Allied Substances*, D. Van Nostrand Co., New York, Fifth Edition, 1945.

[9] Guy, W. H., Jacob, F. M., and Weber, F., *Arch. Dermatol. and Syphilol.*, **40**, 90(1939).

[10] Saunders, T. S., and Davis, W. G., *ibid.*, **55**, 683(1947).

[11] "New Jersey Formulary," Sixth Edition, 1951, p. 39.

[12] Nelson, M. O., and Osterberg, A. E., *Arch. Dermatol. and Syphilol.*, **15**, 669(1927).

[13] Osterberg, Arnold E., Patent (to Chemical Foundation, Inc.), "Coal Tar Ointment," U.S. #1,908,176, May 9, 1933. Through *Chem. Abs.*, **27**, 3779P(1933).

[14] Francke, Don. E., "University Hospital Formulary," Ann Arbor, Mich., Second Edition, 1947.

[15] Anderson, R. A., *Australasian J. Pharm.*, **30**, 823(1949).

[16] Downing, J. G., Ohmart, L. M., and DiCicco, G., *Arch. Dermatol. and Syphilol.*, **49**, 421(1944).

[17] Strakosh, E. A., *Arch. Dermatol. and Syphilol.*, **49**, 8(1944).

[18] Pflag, S. C., and Zopf, L. C., *U.S. Armed Forces Med. J.*, **2**, 1177(1951).

[19] Carney, R. G., and Zopf, L. C., *A.M.A. Arch. Dermatol.*, **72**, 266(1955).

obtained. This liquid extract was used in subsequent experiments and will be referred to as coal tar oil (CTO). Other extraction procedures were attempted, but did not yield as satisfactory results.

Release Evaluation

Release of the coal tar from the ointments was studied by an evaluation of fungicidal activity against Trichophyton mentagrophytes (ATC 9127), using a modified agar cup plate method.[20–23] The culture was prepared by innoculating 200 ml. of a modified Sabouraud Liquid Media[24] with a small piece of stock culture of *T. mentagrophytes* (AT 9127). The culture was incubated for 10 days at room temperature on a rotary type shaking machine and then strained.

One liter of Weidman's modification of Sabouraud's Dextrose Agar[25] was seeded with 100 ml. of the above strained culture after the temperature of the melted agar had dropped to 40–42°C. About 15 ml. of the seeded agar was poured into each Petri plate and allowed to harden. A #6 cork borer was used to cut holes into the plates and the prepared plates stored in a refrigerator at 5°C. until charged.

Approximately 0.25 ml. of ointment was placed into each hole, and the charged plates returned to the refrigerator for 36 hours, following which, the plates were allowed to stand at room temperature for 9 days. At the end of this time, the zones of inhibition were measured.

The Bases

Polyethylene glycol ointment USP XV: The official 40–60 mixture of polyethylene glycol 4000 and polyethylene glycol 400 was used.

Hydrophilic ointment, USP XV: The official ointment was used as the model for this series of bases. The 5% of polyoxylstearate 40 was replaced with 1–5% of the specified emulsifier, and the satisfactory bases were used with the coal tars as described under *Preparation of coal tar ointments.*

Table II—Inhibition of *Trichophyton mentagrophytes* by Coal Tar in Modified Beeler's Bases

Agent %	PSL 1	2	3	4	PSL/SM 5% R	1	2	3	4
1					3/7	8	11	10	0
2	6	6	6	0	4/6	5	15	5	0
3	6	6	7	0	5/5	10	12	12	S
4	8	10	7	0	6/4	C	C	C	S
5	15	12	10	0	7/3				

Key—as for Table I

[20] Nicols, A. B., *J. Am. Pharm. Assoc.*, **26**, 823 (1937).
[21] Kostenbauder, H. B., and Martin, A. N., *J. Am. Pharm. Assoc., Sci. Ed.*, **43**, 401(1954).
[22] O'Brien, F. J., and Bonisteel, W. J., *ibid.*, **30**, 191(1941).
[23] Gibson, A. J., Parker, H. E., and Almus, A., *ibid.*, **30**, 196(1941).
[24] Golden, M. J., and Oster, K. A., *ibid.*, **36**, 359(1947).
[25] Conant, N. F., *et al.*, "Manual of Clinical Mycology," W. B. Saunders Co., Philadelphia, Second Edition, 1954, pp. 186, 336, 349.
[26] Beeler, E. C., *Bull. Natl. Formulary Comm.*, **11**, 27(1943).

Summary

Coal tar ointments made from modified polyethylene glycol ointment, hydrophilic ointment, Beeler's base, hydrophilic petrolatum, and a zinc oxide emulsion base are described.

Dioctyl sodium sulfosuccinate, polyoxyethylene sorbitan monolaurate, a polyoxyethylene sorbitan monolaurate-sorbitan monolaurate mixture, sorbitan monolaurate and sodium lauryl sulfate have been studied as emulsifiers for coal tar ointment bases.

Coal tar, a coal tar-polysorbate 80 mixture, and a coal tar oil derived from coal tar solution have been incorporated into the above bases.

The fungicidal activity of coal tar ointments in the above bases has been determined.

A modification of coal tar ointment is suggested.

Beeler's base:[26] The composition of the bases modeled after Beeler's base was:

Cetyl alcohol	15 Gm.
White wax	1 Gm.
Propylene glycol	10 Gm.
Emulsifier	*qs*
Water	72 Gm.

The 2% of sodium lauryl sulfate of the original formula was replaced with the specified amount of the selected emulsfier as described above.

Hydrophilic petrolatum, USP XV: In this series, the 3% of cholesterol in the USP formula was replaced with the specified quantity of the selected emulsifier.

Zinc oxide emulsion ointment: A modified zinc oxide-starch emulsion base was developed for this study. A number of modifications of the base of Coal Tar Ointment were tried, and the following formula selected as reasonably satisfactory.

Zinc oxide	16 Gm.
Starch	16 Gm.
White petrolatum	34 Gm.
Water	34 Gm.
Emulsifier	*qs*

The starch and zinc oxide were mixed with the melted petrolatum and the emulsifier. The water, previously heated to 70–80°C., was incorporated with stirring. Satisfactory bases were obtained with all but the sodium lauryl sulfate by this procedure.

Preparation of Coal Tar Ointments

The experimental ointments were prepared by incorporating the following into the selected base:

1. Coal Tar USP, 3%
2. A mixture of coal tar (6 parts) and polysorbate 80 (1 part), 3%
3. The coal tar oil, previously described, 2%. This quantity of coal tar was determined as equivalent to 3% of original coal tar based on the yield of the coal tar oil in the extraction process.

The ointments were prepared by simple incorporation of the coal tar materials into the base by use of a spatula and slab. The coal tar oil and the coal tar-polysorbate 80 mixture mixed easily with the bases, and the coal tar could be mixed satisfactorily by this procedure.

Results

Polyethylene glycol ointments: The 3% level of surface active agent yielded the most satisfactory products. Complete inactivation of the fungus was observed with all the coal tar ointments, but the validity of the determinations is doubtful inasmuch as the ointments dissolved in the fluid of the media and flowed over the entire surface of the plates.

Hydrophilic ointment base ointments: The modified hydrophilic ointment base products yielded satisfactory ointments at concentrations of 2–5% with all of the emulsifiers except sorbitan monolaurate. Zones of inhibition are shown in Table I.

Beeler's base ointments: Dioctyl sodium sulfosuccinate did not produce satisfactory bases. Polyethylene sorbitan monolaurate and the PSM/SM mixture, the former at levels of 2–5%, the latter in all proportions at the 5% level, produced more satisfactory ointments with coal tar than the original formulation with sodium lauryl sulfate. The zones of inhibition for these ointments are shown in Table II.

Hydrophilic petrolatum: Satisfactory bases were obtained with this base over the range of 1–5% with all the surface active agents except sodium lauryl sulfate. Zones of inhibition were less than 1 mm. with all the ointments prepared with these bases.

Zinc oxide emulsion base: In the preparation of this base, DSS 4% and PSL 2% and 3% produced satisfactory preparations from a pharmaceutical standpoint. Some degree of gelatinization of the starch could be observed under a microscope, but the texture of the bases was satisfactory from a subjective observation. Table III shows the zones of inhibition produced by these ointments.

Table III—Inhibition of *Trichophyton mentagrophytes* by Coal Tar in Zinc Oxide Emulsion Bases

Agent %	PSL #1	#2	#3	#4	DDS #1	#2	#3	#4
2	10	10	10	S				
3	10	10	10	S				
4					17	20	20	16

Key—as for Table I

Controls: The coal tar, the coal tar-polysorbate 80 mixture, and the coal tar oil all produced complete inhibition when tested in the absence of the bases. Polysorbate 80 in 36% aqueous solution did not exhibit a measurable zone of inhibition.

Discussion

Coal tar can be incorporated into O/W emulsion and water-miscible bases to produce stable, pharmacuetically elegant ointments. The use of polysorbate 80 as a dispersing agent simplifies the mechanical aspect of the incorporation of the coal tar, but does not appreciably increase the completeness of release of the coal tar when water-immiscible bases are used.

The effectiveness of coal tar as a fungicide, as measured in this study, is increased by the use of water-miscible bases. The use of water-immiscible bases with coal tar

shows a definite inhibition of the fungicidal action of the coal tar as compared to the coal tar control. If, as is generally assumed, the agar cup plate method measures completeness of release of the active constituents, it seems logical to assume that this inhibition is due to failure of the water-immiscible base to release the fungicidal components of the coal tar to the aqueous media on which the organism grows.

Dioctyl sodium sulfosuccinate appear to be the most effective of the agents studied in this report. Anionic surface-active agents are sometimes irritating[27] but a report[28] indicates the dioctyl sodium sulfosuccinate may not be irritating at the 2% level when tested by the rabbit cornea method. In these studies, dioctyl sodium sulfosuccinate appears to be about as effective at the 2% level as at higher levels.

Polyoxyethylene sorbitan monolaurate, although less effective than diocytl sodium sulfosuccinate, also produces satisfactory ointments when used as an emulsifier in O/W emulsion bases.

Hydrophilic ointment type bases appear to be the most satisfactory bases for coal tar ointments and can be used with various types of surface active agents as emulsifiers. Emulsion bases of extremely high water content, such as the Beeler base present problems of stability and probably have little advantage to recommend them over emulsion bases of water contents in the 35% to 50% range.

Coal tar, the coal tar-polysorbate 80 mixture and the coal tar oil all exhibit about the same effectiveness. The coal tar-polysorbate 80 mixture, and the coal tar oil facilitate the admixture of the coal tar and the base, and the coal tar oil is less staining and troublesome in compounding.

The zinc oxide emulsion base ointments produced zones of inhibition appreciably larger than those produced by water immiscible bases, but did not compare favorably with the more typical emulsion bases.

On the basis of this study, the authors recommend the use of the following ointment as a satisfactory coal tar ointment, using either dioctyl sodium sulfosuccinate or polyoxyethylene sorbitanmono laurate as the emulsifier.

Coal tar oil	2 Gm.
Stearyl alcohol	25 Gm.
White petrolatum	25 Gm.
Propylene glycol	12 Gm.
Emulsifier	2 Gm.
Water	34 Gm.

Mix the stearyl alcohol and the white petrolatum and melt over a water bath. Dissolve the propylene glycol and the emulsifier in the water, heat to the same temperature as the melted oleaginous phase and add the aqueous solution with agitation to produce an emulsion. Stir until congealed and incorporate the coal tar oil.

The official formula for hydrophilic ointment calls for the use of methyl and propyl parabens as preservatives against fermentation, but they are not required in this formulation. ■

[27] Lyman, R. A., and Sprowls, J. B., Editors, "American Pharmacy," J. B. Lippincott Co., Philadelphia, Fourth Edition, 1955, p. 333.

[28] Allen, B. F., and Levine, P. J., THIS JOURNAL, **19**, 154 (1958).

Flattering Restyling

After 128 years, the stolid, staid, and stable *Pharmaceutical Journal*, the official organ of the British Pharmaceutical Society, has changed its format to the extent that could be called radical for such a conservative organ. It must have been a back-breaking task for the editor to achieve this splendid improvement in readability.

Perhaps a change such as this provides one more indication of the modern trend to break with tradition in all areas of our economic, social, and political life. The good old methods of doing things, the feelings of security and dependability resulting from faith in long-used procedures and from solid links with the past are rapidly yielding to a new venturesomeness and a new pioneering spirit all over the world.

It is interesting to note, however, how closely the newly adopted style coincides in many details with that introduced in the January 1957 issue of THIS JOURNAL, just two years ago. Departmentalization of content is achieved through judicious use of rules, display headings, and white space. New type faces and the flexibility of the 2- and 3-column format are also well handled.

We salute our British colleagues for their major improvement and wish them long-continued success for many more centuries.

MD International

One of television's most acclaimed documentaries—"MD International," the inspiring story of the work of American doctors who serve in the far corners of the world—will be rebroadcast in color from 5 to 6 P.M. (EST) Sunday, February 22, on the full NBC network.

"MD International" received unprecedented praise from TV critics, the viewing public, and members of the medical profession when it was originally presented by the American Medical Association and Smith Kline & French Laboratories in January, 1958.

The film sought to present two aspects of the work of U.S. doctors overseas—their accomplishments as men of medicine, and their service as unofficial ambassadors of U.S. good will. To find these dedicated men and women, a special 7-man March of Medicine film crew traveled 34,000 miles in 81 days—using every means of transportation from turbojets to Tibetan ponies. At the end of the odyssey, the crew brought back unforgetable scenes from Korea, Hong Kong, Borneo, Nepal, Ethiopia, and India.

The nation's television critics—without exception—have hailed this documentary of the March of Medicine program for its message of man's humanity to man as meaningful and moving, for it reports our era as a time of nobility of spirit and limitless human kinship.

Adult Immunization Schedules

A physician consultant to the *Journal of the American Medical Association* has outlined the optimum intervals for adult immunization, assuming that an adequate initial immunization series has been given. These intervals are:

Smallpox—Vaccination is needed every three years.

Diphtheria—Immunization is not recommended for adults except in cases where the person shows no immunity after exposure to special risks.

Tetanus—A booster dose should be given at the time of each injury where the danger of tetanus exists, with reinjection in the absence of an injury at intervals of no longer than five years.

Typhoid—Reinforcing injections are necessary every three years.

Influenza—Injections should be given every year to "risk cases," such as old or chronically ill persons.

Poliomyelitis—Not enough time has elapsed yet to learn about the duration of protection conferred by the Salk vaccine, but a fourth dose, given not earlier than one year after the third dose, could be administered to individuals exposed to special risks.

The above are general guiding schedules only. More frequent innoculations may sometimes be necessary.

VA Tests Antidiabetic Drugs

Effectiveness of two of the newer antidiabetic drugs will be tested by the Veterans Administration in a large-scale cooperative study, the agency announced today. The compounds are tolbutamide (Orinase), the first widely used antidiabetic tablet, and chlorpropamide (Diabinese), which became generally available to doctors about 2 months ago.

The project, just getting under way at 8 VA hospitals, is aimed at learning to what extent these drugs given by mouth can replace daily insulin injections on a long-term basis for persons with diabetes. Some 400 VA patients will receive the medication twice daily at 12-hour intervals for a minimum of 8 months.

Dr. Edward Dunner, chief of the VA clinical studies division in Washington, D.C., said although much has been learned about the early results of administration of the compounds, more information is needed about their effects over a considerable period of time.

A compilation of information on

unofficial flavors

by Fred Wesley, B.S.*

MANUFACTURING PHARMACY has made it a practice to resort to the use of flavoring agents in pharmaceutical preparations, in order to meet the need for presenting the public with medicines of acceptable taste.

While the *United States Pharmacopeia* and the *National Formulary* list a fair number of flavors, of which many have found their way into pharmaceuticals, a score of flavoring materials remain absent from the official compendia, yet widely employed by the industry. These "unofficial" pharmaceutical flavors, despite their role as vital adjuncts to modern drugs, receive little if any mention in the pharmaceutical literature. Because of this, an attempt was made to define, classify, and describe them as well as to determine their fields of application.

* Received from the Flavor Research Laboratory, Fritzsche Brothers, Inc., New York, N.Y.
Presented to the Section on Practical Pharmacy, APhA Los Angeles Convention, April 1958.

[1] "Pharmaceutical Flavor Guide," Fritzsche Brothers Inc., New York, 1957.

FRED WESLEY, Flavor Chemist, Fritzsche Brothers, Inc., is a registered pharmacist in the State of New York. He has lectured and written widely on pharmaceutical flavors. His memberships include the American Pharmaceutical Association, the American Society of Hospital Pharmacists, the American Association for the Advancement of Science, the Institute of Food Technologists, the Society of Flavor Chemists, and the Society of Pharmacists in Industry.

Method

The method used consisted of the collection of data obtained from pharmaceutical flavor testing over a period of 5 years[1] and from referral to a previous article.[2] In each case, flavor *type* was the sole criterion, not flavor *composition*. The latter, particularly with respect to marketed pharmaceuticals, would have been impossible to ascertain in detail.

Table I.—USP and NF Flavor Types

Fruit		
Cherry	Lemon	Orange	Raspberry
Nonfruit		
Anise	Eucalyptus	Sarsaparilla
Bitter Almond	Fennel	Sassafras
Caraway	Ginger	Spearmint
Cardamom	Licorice	Thyme
Cinnamon	Nutmeg	Tolu
Clove	Peppermint	Vanilla
Cocoa	Pimenta	Wintergreen
Coriander	Pine	Yerba Santa
	Rosmary	

Discussion

An unofficial pharmaceutical flavor may be defined as one absent from the list of USP and NF flavor types (Table I). The list purposely omits ethyl acetate, because it serves primarily as a basic component of flavoring mixtures rather than as a complete flavor in itself. There are two clear-cut groups of unofficial pharmaceutical flavors: fruit and nonfruit. Table II lists the members of each group.

A breakdown of flavors according to official status and type (Fig. 1) shows the numerical strength of unofficial *fruit* flavors, when compared with that of their official counterparts. On the other hand, the unofficial *nonfruit* flavors fare rather poorly number-wise in comparison with the official ones.

Table II.—Unofficial Flavor Types

Fruit		
Berries	*Citrus Fruits*	*Mixed Fruits*
Black Currant	Lime	Tutti Frutti
Gooseberry	Tangerine	*Tropical Fruits*
Grape	*Drupes*	Banana
Grenadine	Apricot	Passion Fruit
Loganberry	Peach	Pineapple
Strawberry		
Nonfruit		
Aspic	Coconut	Egg Nog
Butterscotch	Coffee	Maple
Cachou	Cream Soda	Port
Caramel	Custard	Root Beer
		Rum

Specific Applications

The following data pertaining to application of these flavors are based upon specific instances in which the drug industry uses them[2], or upon recommendations by flavor makers given for use in more generally described classes of pharmaceuticals[1]:

Apricot.—The popular "three bromides" and "five bromides" receive good taste coverage from apricot flavor. The latter works well also in lozenges and in cough syrups, particularly those containing dihydrocodeinone bitartrate and ephedrine.

Aspic.—This spicy flavor lends itself particularly well to the use in dietary supplements, iron preparations, laxatives, protein hydrolysates, and vitamins. Monosodium glutamate and salt often help to bring out the desirable features of this type most advantageously.

[2] Wesley, F., THIS JOURNAL, 18, 674 (1957).

Banana.—This is an excellent flavor for penicillin in its various forms. Combined with pineapple it works well in mixtures of antibiotics and vitamins. A banana-vanilla combination enjoys a range of application that includes, in addition to the above, such groups as analgesics, antipyretics, baby foods, dietary supplements, emulsions, geriatric and pediatric preparations, sedatives, and antispasmodics.

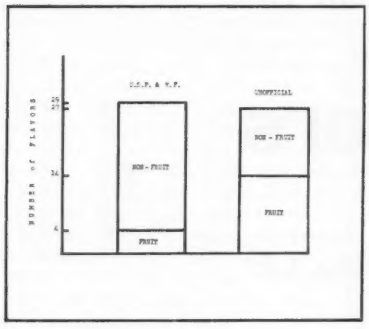

Fig. 1—Fruit vs. Nonfruit Flavors

Black Currant.—The sweet and aromatic bouquet of this flavor is responsible for its diverse usability stretching from antihistamines, barbiturates, cough syrups, emulsions, and expectorants, to geriatric and pediatric preparations, iron, liver, vitamins, and yeast.

Butterscotch.—Safflower oil emulsions, relative newcomers to the field of modern therapeutics, can be flavored quite attractively with butterscotch, whose "butter" character- organoleptically and psychologically fits the oily note of the emulsion. Butterscotch is also used with penicillin and cough syrups containing dextromethorphan. Further applications, where butterscotch is recommended, are analgesics, antipyretics, dietary supplements, geriatric preparations, intestinal adsorbents, iron, liver, and mephenesin. A combination of butterscotch and maple works well with aminophylline and theophylline, laxatives, and vitamins. Frequently, the use of a small amount of salt in butterscotch-flavored preparations provides much improvement of the taste.

Cachou.—The objectionable odor of iron, liver, and vitamin capsules may be masked effectively with cachou flavor. One way of applying it is to saturate the cotton plug inside the bottle that holds the capsules with the liquid flavor. Sufficient odor from the flavor will be left even after removal of the cotton to cover up the disagreeable effect of the medicine on the olfactory nerve endings.

Caramel.—This flavor is well suited for use in vitamin tablets. Combined with mint it is used for sulfamethoxypyridazine.

Coconut.—Dietary supplements and intestinal adsorbents lend themselves well to flavoring with coconut. It is also used with nitrofurantoin. Combinations with vanilla are indicated for baby foods and antihistamines and with custard for sulfas and penicillin.

Coffee.—This is recommended for dietary supplements.

Cream Soda.—Vitamin-mineral tonics and intestinal adsorbents are successfully flavored with cream soda. A combination of cream soda and citrus is recommended for sulfa preparations.

Custard.—This is used as a cherry custard with novobiocin, as coconut custard with sulfas and penicillin, as lemon custard with erythromycin, and as vanilla custard with penicillin.

Eggnog.—This flavor is well suited for intestinal adsorbents, such as aluminum, bismuth, kaolin, magnesium, pectin.

Gooseberry.—A rather unusual flavor, it imparts fine taste appeal to cough syrups and expectorants.

Grape.—This flavor has been proven to be effective for preparations used in calcium therapy, pediatrics, and vitamins.

Grenadine.—Its fine fruity and aromatic character makes grenadine an excellent flavor for analgesics and antipyretics and for pediatric preparations in general. Combined with strawberry, grenadine is used in barbiturate-containing elixirs.

Lime.—This citrus flavor commands a wide range of application, including antibiotic lozenges and troches, antihistamines, belladonna alkaloids, barbiturates, digitalis glycosides, anthelmintics, vegetable tonics, and vitamins. Forever popular is the well-known combination of lemon and lime, which finds its use in antibiotics, calcium preparations, cough drops, homatropine methyl bromide, iron plus ascorbic acid, laxatives, liver, lozenges, medicated candy, Rauwolfia preparations, and troches. A lime with spice works well in throat lozenges.

Loganberry.—Minerals such as iron and molybdenum are acceptably flavored with loganberry.

Maple.—Maple flavors cover a wide field: antibiotics, dextromethorphan, dietary supplements, intestinal adsorbents, ipecac, terpin hydrate, vegetable tonics, and vitamins. Of great significance is maple combined with another flavor, such as maple and butterscotch, which is used with aluminum, aminophylline, bismuth, kaolin, laxatives, magnesium, pectin, theophylline, and vitamins. Maple-honey fits into vitamin preparations and maple-vanilla goes with the same medicines as does the straight maple, with additional uses in sulfa and penicillin-sulfa combinations.

Passion Fruit.—This very pleasant fruity flavor is almost universally suited for pharmaceutical preparations. It is particularly adapted to aminophylline, analgesics and antipyretics, antibiotic-vitamin combinations, barbiturates, cough syrups, emulsions, liver and iron, lozenges, pediatric and geriatric preparations, and for vitamins. If acid is used with this flavor, the resulting tartness will serve to lift up the flavor for optimum sensory appeal.

Peach.—This flavor is good for acetazoleamide, antibiotics, bromides, cough syrups, pediatric preparations, and vitamins. Peach with anise finds use in cough syrups and peach with orange in antihistamines, barbiturates, codeine, and ephedrine. An interesting combination is peach with rum, used in antihistamines and in cough syrups.

Pineapple.—Antibiotic-sulfa combinations, cough syrups, and vitamins lend themselves well to flavoring with pineapple. An interestingly different version of the latter is known as *fresh* pineapple. This is used in antibiotic-vitamin combinations, bromides, and vitamins. Phensuximide uses anise-pineapple. Banana-pineapple blends well with antibiotic-vitamin combinations and intestinal adsorbents. Pineapple-orange is used in laxatives.

Port.—This flavor is suited for tonics, especially those of the geriatric kind, and for nicotinic acid derivatives. A port-vanilla-raspberry combination is recommended for tonics containing strychnine, quinine, and phosphates.

Root Beer.—This is another all-purpose flavor. It is especially useful in preparations where fruit flavors do not work because of pH limitations prohibiting the addition of acids. The main groups with which this flavor belongs are analgesics, antibiotics, barbiturates, cough syrups, emulsions, geriatric preparations, intestinal adsorbents, laxatives, liver and iron, lozenges, pediatric preparations, sulfas, vegetable tonics, and vitamins.

Rum.—This flavor combines with peach for use in antihistamines and in cough syrups and expectorants.

Strawberry.—Antispasmodics, barbiturates, carbetapentane, geriatric preparations, iron, laxatives, muscle relaxants, piperazine, sulfas, tranquilizers, vitamins, and yeast use this delicate flavor. A so-called strawberry cream blend appears in sulfas, and a strawberry-vanilla in sulfas and in vitamins.

Tangerine.—A close resemblance to orange is exhibited by this citrus type flavor. It works best in an acid medium. Citric is the acid of choice to impart the proper tartness. Tangerine is usually offered as a fivefold concentrate, representing a partially deterpenated oil. This has better stability than the straight oil. Tangerine flavor is recommended for vitamin preparations.

Tutti Frutti.—This composite flavor is used in analgesics, antipyretics, and in vitamins.

Particularly noteworthy with respect to the foregoing is the frequent occurrence of blends of two different flavors. This attests to their present popularity (Fig. 2).

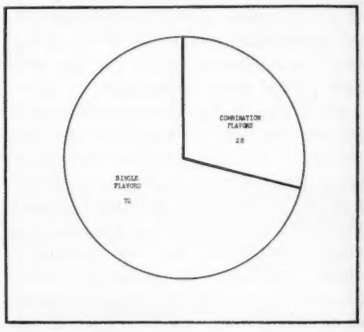

Fig. 2—Percentage of Combination Flavors

Summary and Conclusions

Pharmaceutical flavors, other than those listed in the USP and NF, were subjected to an investigation, resulting in descriptive and applicationary data, with the following conclusions:

1. As many as 48% of a given number of pharmaceutical flavors were of the *unofficial* type.
2. As many as 78% of a given number of pharmaceutical *fruit* flavors were of the *unofficial* type.
3. Among the *unofficial* types, 28% were combinations of two different flavors.

This illustrates the vital significance of *unofficial* flavors, particularly those of the fruity type, plus the apparent tendency toward the use of mixtures of flavors.

Finally, it demonstrates the existing endeavor on the part of pharmaceutical research to restrict its flavor choice no longer to the narrow confines of the official compendia. ■

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THE DISPENSATORY OF THE UNITED STATES OF AMERICA *Osol & Farrar. 2139 Pages. 25th Edition, 1955. $25.00*

THE NATIONAL FORMULARY X. Committee on National Formulary, American Pharmaceutical Association. *867 Pages. 10th Edition, 1955. $9.00*

TEXTBOOK OF PHARMACEUTICAL COMPOUNDING AND DISPENSING. *Lyman & Sprowls. 477 Pages. 2nd Edition, 1955. $9.75*

AMERICAN PHARMACY: Textbook of Pharmaceutical Principles, Processes and Preparations. *Lyman & Sprowls. 478 Pages. 4th Edition, 1955. $9.75*

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APhA Women's Auxiliary

State Auxiliary Elects Officers for 1959

The Women's Auxiliary to the Michigan Branch of the APhA elected the following officers at their annual meeting in December: Mrs. Robert Kuntz, President; Mrs. S. Sirhan, Vice President; Mrs. L. Malicke, Secretary; and Mrs. R. Lakey, Treasurer. The Auxiliary has several continuing projects which include the awarding of APhA memberships each spring to the outstanding woman graduate in each of the three schools of pharmacy in the state; a tea is given in the fall to welcome the women pharmacy students at Wayne University, and a committee works year around at the St. Francis Cabrini clinic pharmacy which is in the slum area of Detroit and which serves all who come gratis regardless of race, creed, or color.

An Apology

It is with sincere regret that we learn in expressing our congratulations to our first Life Member the spelling of her name was erroneous. May we correct it, with humble apologies. It should have read Mrs. Wm. H. McNeill, of Midland Park, N.J.

Pharmacy Students' Wives Club

The Pharmacy Students' Wives Club of Southwestern State College, Weatherford, Oklahoma, has applied for a charter and has the following officers and members: Mrs. S. Parsons, President; Mrs. D. Mallouf, Vice President; Mrs. M. Hackney, Secretary; Mrs. W. Hubbard, Treasurer; Mrs. D. Woods, Reporter; Mrs. L. Hawkins, Historian; Mrs. R. Baldwin, Mrs. L. Barber, Mrs. O. Brummett, Mrs. W. Hill, Mrs. L. Holt, Mrs. D. Lackey, Mrs. C. Moudy, Mrs. E. Ogle, Mrs. L. Opdenhoff, Mrs. W. Robertson, Mrs. J. Robinson, Mrs. G. Tappana, Mrs. G. Turner, Mrs. E. Boatman, Mrs. P. Hancock, and Mrs. R. Wegner.

The Pharmacy Students' Wives Club of the University of Georgia also applied for a charter and has the following officers and members: Mrs. R. Spittle, President; Mrs. W. Culpepper, Vice President; Mrs. B. Floyd, Recording Secretary; Mrs. G. Maloney, Jr., Corresponding Secretary; Mrs. M. Crouch, Treasurer; Mrs. C. Jackson and Mrs. T. Tyre, Program Chairmen; Mrs. W. Arrington, Mrs. J. Ballew, Mrs. C. Brackett, Mrs. C. Byars, Mrs. J. Flowers, Mrs. A. Gissendanner, Mrs. H. Holland, Mrs. F. Lee, Mrs. R. Miles, Mrs. M. Peck, Jr., Mrs. L. Pritchard, Mrs. F. Randolph, Mrs. D. Russ, Mrs. N. Sessions, Mrs. C. Sloan, Mrs. T. Tyson, Mrs. J. Vinson, and Mrs. G. Warthen.

It is a pleasure to welcome these new members, and we hope they find a great deal of enjoyment and satisfaction in their association.

Do Not Boycott Pharmacy

Our Auxiliary is pledged by its constitution to assist the AMERICAN PHARMACEUTICAL ASSOCIATION. This means to assist its members also and this cannot be done by unintentionally boycotting pharmacies. See my observations on the opposite page.

Dorothy M. Cusick, President
APhA Women's Auxiliary

A pharmacist's wife looks at **supermarkets**[1]

Frequent complaints are heard regarding the difficulty the independent pharmacist has in maintaining a successful business. Some are even blaming it on a recession. But, is it truly that? Is the average American homemaker and shopper, who is known to spend the greater part of the family income, daily taking business away from the local pharmacist and giving it instead to large corporations through national or state-wide supermarkets, which have no interest locally except in the profit obtained from quantity sales?

In these modern, well lighted stores, one finds an amazing array of pharmaceutical items: aspirin, vitamins, baby powder, oils, absorbent cotton, shampoos, permanent waving materials, deodorants, etc. They are so conveniently located you just put what you need in your shopping cart without even thinking that the two or three dollars you unintentionally spent on these things is two or three dollars you are taking away from the income of the store operated by your friend, the pharmacist, down the street—the friend who attends the same PTA meeting that you do, who owns his home in the community, who has been paying taxes in your town for years, and who is really interested in the welfare of the community.

Does the supermarket open its doors at midnight to fill a prescription for you? Does the manager of that market cheerfully deliver that bottle of aspirin, if you have no way of getting to the store?

You go on to another display shelf and suddenly realize you are out of film and it always happens you want to take a picture just when there is no film in the camera, so you had better take two rolls now that you think of it. The friendly pharmacist down the street also sells film and is usually glad to reload your camera for you. If it seems too intricate for you or if the results were not so good last time he will probably also set it in case all those gadgets overwhelm you.

Did the cashier in the market, or the manager, or the assistant manager or even the stock boy ever offer to do this for you, or would they if you asked?

You are almost out of facial tissues so you put a couple of boxes of those in the basket. The pharmacist also sells them but the profit is so small he wouldn't mind if you bought them at the market. He wouldn't????? He would be delighted to sell as many as the supermarket does each week.

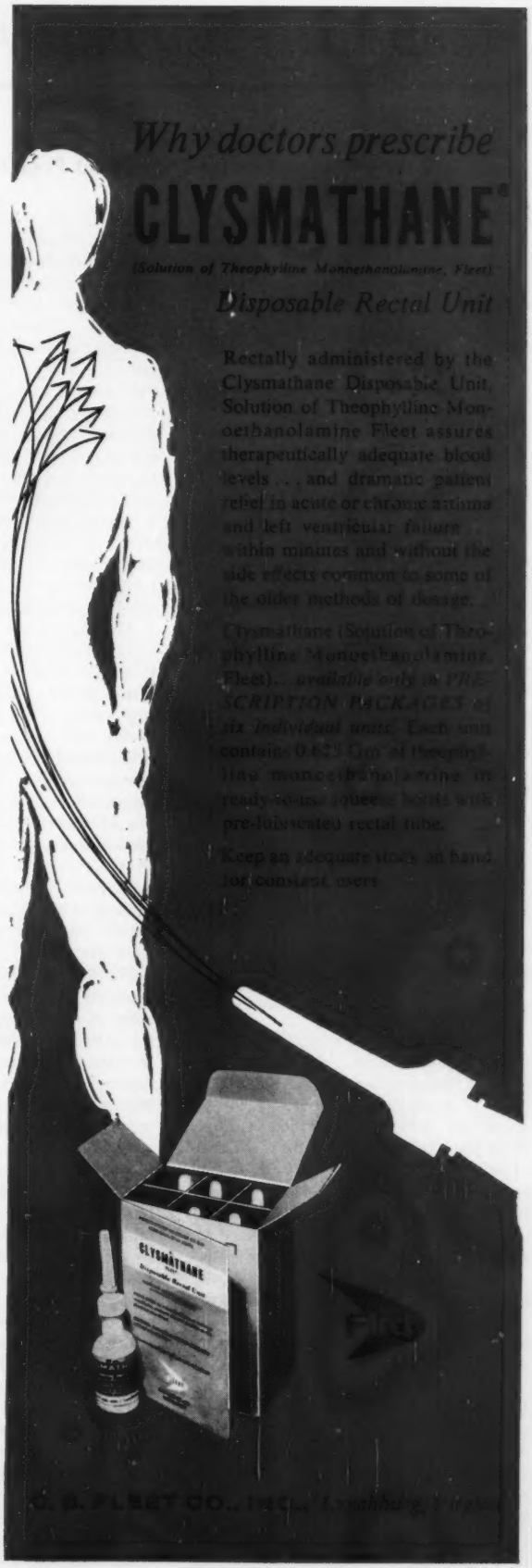
And next comes the greeting card display. With Aunt Minnie's birthday coming and little Tommy down the street confined with a bout with the chicken pox here is just what you want, and then you buy a couple more to have extras.

And toothpaste—no one has remembered to buy it, and for the last couple of days there has been none at home so to prevent this from happening again, at least soon, you put two of the giant size in the shopping cart. And on the same shelf you see some of that denture adhesive stuff that Grandad uses and recall those dentures of his have been a litle noisy of late so no doubt he needs some of this. As you take the package from the shelf you notice the price is the same or even just a little more than the druggist charges, but you console yourself—next time you will get it from that nice pharmacy.

If every woman associated in some way with Pharmacy and every woman truly interested in Pharmacy would consider each item which is not really a food item, as she puts it into her shopping cart, she would soon learn that she and her friends at present are thoughtlessly giving most of their drug business to the supermarket and these same shoppers can be pioneers in giving this business back to their drugstores.

It is incongruous to complain after the local pharmacist is forced to close his doors because we ourselves bought our common medicine cabinet and bathroom needs at the supermarket or grocery store.

[1] Prepared by Dorothy M. Cusick, President, APhA Women's Auxiliary.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Hospital Pharmacy

by Paul F. Parker

Retail Pharmacy and Outpatient Prescriptions

The growing volume of hospital outpatient prescriptions continues to alarm retail pharmacists. In expressing resentment, they advance two arguments to support their position. These are:

1. Hospitals have a tax exempt status and therefore offer unfair competition to retail pharmacies.
2. Hospitals receive special discounts from pharmaceutical manufacturers and this further increases their advantage over retail pharmacy.

Many hospital pharmacists and some hospital administrators agree that for the hospital to fill outpatient prescriptions offers unfair competition to retail pharmacies in the community. Furthermore, some believe that filling outpatient prescriptions is beyond the purpose of the hospital although the patient may be registered there, may see the physician in his office located there, and use hospital X-ray, laboratory, and other services.

There is every reason to sympathize with the retail pharmacist in his viewpoint. However, there are opportunities for him to alter the situation in his own community. To grasp these opportunities, requires an understanding of the hospital and recognition that its primary purpose is to serve the health needs of the people in that same community. Also, he should maintain close liaison with the hospital's officers, administrator, and medical staff.

Tax Exemption

Hospitals are tax exempt because of their nonprofit status. As a result they do have tax advantages which make their costs of operation considerably lower. Even so, seldom does their income from patient care cover the total cost of operation. Traditionally, hospitals have depended upon philanthropy, community giving, and other similar sources of subsidy to operate in the black. As these sources have dwindled, administrators have been forced to increase costs and seek other sources of support. Income from the pharmacy department is an important factor in filling this need.

Administrators and members of the boards of trustees do not operate outpatient prescription departments to compete with retail pharmacies in the community. They do so for the convenience of patients and to supplement hospital income. Therefore, one answer for the retail pharmacist in this dilemma is to provide prescription services as complete and convenient to the patient as those offered by the hospital.

Hospital pharmacists sometimes claim that patients are unable to obtain special formulations that are prescribed in the hospital. These preparations usually are special ointments, opthalmic solutions, or other items that are not commercially available. Most of these materials are not difficult to prepare, nor do they require a great deal of extra equipment for preparation, but it is necessary for the pharmacist who fills such prescriptions to know what the physician wants and why he wants it. Thus, it is necessary for the retail pharmacist to work closely with the physician in order to understand his special needs for hospital patients.

Although some hospital outpatients believe that it is more convenient to have their prescriptions filled at the hospital, others prefer to have them filled at their community retail pharmacy in order to obtain refills more conveniently. A few believe that the drugs dispensed in the hospital are of higher quality than those dispensed elsewhere. The retail pharmacist, therefore, should not only make his services as convenient to the patient as those of the hospital, but should make everyone in the community aware of these conveniences and of the quality of his products through good public relations.

If the hospital medical staff had confidence in the quality and convenience of retail pharmacy services and if the hospital officials had no obligation to provide outpatient services because of convenience, then the reason for establishing an outpatient pharmacy service would be to supplement income.

Although it is unlikely that the retail pharmacist could eliminate the need for additional hospital income, it is entirely possible that he could influence the administrator and the board of trustees to seek this income from sources other than the pharmacy. He could do this by personally promoting community support of hospital fund-raising drives and other activities. Hospital officials invariably ask for the cooperation of business men and community leaders to rally the support of the community in their fund-raising campaigns. Few professional or business men are in a position to assist hospital promotion activities more effectively than the pharmacist.

If the retail pharmacist were known as a leader in obtaining community support for the hospital, and the medical staff recognized that he was making every professional effort to serve the patients' drug needs, then there would be less desire for the hospital to compete with him in filling outpatient prescriptions.

Special Discounts

What about the issue of special discounts on drugs sold to hospitals? Is this the concern of the hospital or of the profession of Pharmacy?

Pharmaceutical manufacturers have found it good business to give special hospital discounts. Discounts are usually based upon quantity purchases of either bulk products or specially packaged items unsuitable for retail distribution. This gives the manufacturer an opportunity to offer lower prices without so-called "price discrimination." Actually, hospital drug business is big business. It is estimated that from 25% to 30% of all prescription drugs are sold in hospitals. Each pharmaceutical manufacturer is anxious to obtain his share of this business.

Manufacturers are also anxious to have their products stocked in hospitals in order that hospital personnel may become acquainted with their products. A large majority of the members of the health professions are trained in hospitals. If they use a particular product during their period of training, there is a high probability that they will continue to use it in private practice.

Yes, hospital business is good business for the pharmaceutical manufacturer. Can pharmacists argue effectively with hospital administrators that it is unfair for them to take advantage of these special discounts? This argument is probably out of place in relation to the hospital outpatient prescription problem and should be negotiated within the profession of Pharmacy.

Only a small fraction of total hospital drug purchases are dispensed to outpatients. However, this represents an appreciable volume of drugs. If hospitals handled only those drugs actually administered to inpatients, there would certainly be a significant increase in retail prescription volume. To obtain this business, retailers might well adopt a positive approach. The retail pharmacist may be unhappy about the apparent trend toward centralization of the medical and health services around the hospital; nevertheless, this trend is probably so well established that he must work along with it if he is going to be happy and successful.

Economics

by Richard R. Dier

Consumers Spend More for Medical Care Than Ever Before

Americans spent $15,000,000,000 for medical care in 1957, about five times the amount spent in 1929. During the period 1929–1957, there has been an average annual increase of approximately 6% in this important area and all indications point to a continuation of this spiral.

Expenditures for Drugs

An analysis of the composition of the medical care dollar in 1929 and 1957 reveals that expenditures for drug preparations and sundries increased from $604,000,000 to $3,098,000,000. According to *Progress in Health Services*, published by the Health Information Foundation, this category took 20.6 cents of the medical care dollar in both 1929 and 1957. However, its rank dropped from second to third (see Chart I).

Physicians

For the services of physicians, largest of the components from 1929–1954, spending rose from $959,000,000 in 1929 to $3,693,000,000 in 1957. Nevertheless, consumer expenditures for physicians' services dropped from 32.6 cents to 24.5 cents and it fell from first to second position as a component part of the medical dollar.

Hospitals Now in First Place

By contrast, spending for hospitals which ranked fourth in 1929 (after physicians, drugs, and dentists) gained steadily and now occupies first position in the composition of the medical care dollar. Volume of expenditures increased from $403,000,000 in 1929 to $3,884,000,000 in 1957.

Dentists

Although people spent $482,000,000 for dentists' services in 1929 and $1,705,000,000 in 1957, its share of the medical care dollar dropped from third to fourth position.

Spending for other professional services also increased in volume from 1929–1957, but declined with relation to the others in their share of the composite dollar. They include osteopathic physicians, chiropractors, chiropodists and podiatrists, private-duty trained nurses, and miscellaneous curative and healing professions.

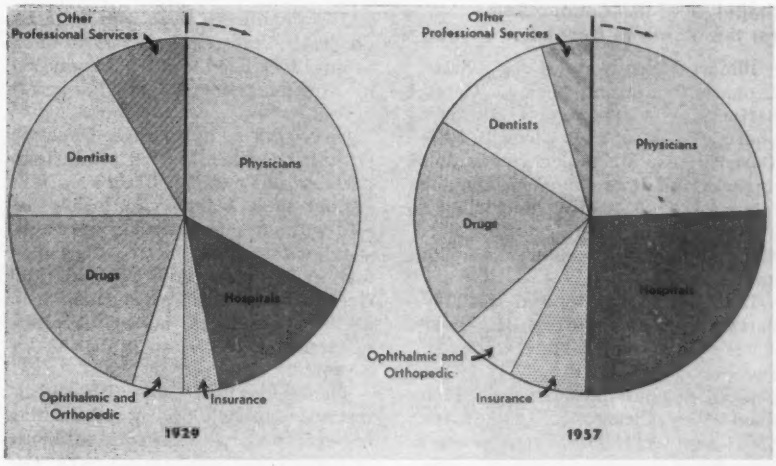


Chart I—Composition of the Medical Care Dollar (personal consumption expenditures)
Source: National Income Division, U.S. Dept. of Commerce, published and unpublished data; Progress in Health Services, Dec. 1958.

Insurance

Spending for hospitalization and medical care insurance rose from $108,000,000 in 1929 to $1,064,000,000 in 1957. Actually, this component increased at a somewhat higher rate than hospitals; however, in dollar volume the increase was less because it began at a much lower figure. It moved from seventh to fifth place in its share of the medical care dollar. Expenditures for ophthalmic products and orthopedic appliances also increased relatively.

Shifts in Medical Care Spending

The rise in medical spending has also brought a significant shift in the relative proportions spent for the various services which comprise medical care. Currently, proportionately more money is being spent for hospitals. for health insurance costs, and for ophthalmic products and orthopedic appliances. Conversely, physicians, dentists, and other professional services are taking a smaller share of the medical care dollar. Expenditures for drugs and sundries, however, have been relatively constant.

Drug Industry Growth

Unprecedented research and growth of the drug industry have sparked the medical advances that have improved health so significantly in the last two decades. Drug manufacturers are spending twice as much on research today as they did four years ago, which is about 8 times the average of other industries.

An all-time high of $170,000,000 was spent for research in 1958, approximately 34% over 1957's $127,000,000. About $190,000,000 will be expended for research in 1959, a survey by the Pharmaceutical Manufacturers Association reveals.

As a result, phenomenal growth of the industry since 1938 is readily apparent. According to the Annual Report of the Vick Chemical Company, sales at manufacturers' levels of ethical drugs rose from $151,000,000 in 1938 to $1,700,000,000 in 1957. Sales of proprietary drugs increased from $176,000,000 in 1938 to $427,000,000 in 1957. Veterinary drugs sales totaled only $19,000,000 in 1938; in 1957, sales were $140,000,000 (exclusive of feed medications on which statistics are unavailable). See Chart II.

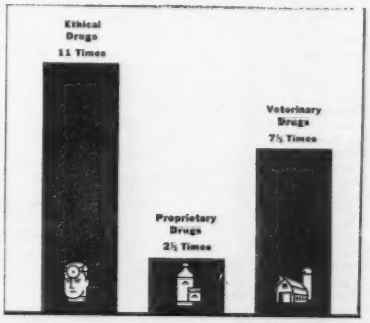


Chart II—How Drug Industry Grew from 1938–1957 to Meet Modern Health Needs[a]

[a] Source: Annual Report, Vick Chemical Company, June 30, 1958.

Federal and State Actions

FDA Actions

Illegal Over-the-Counter Sales for the Month of December

Illinois—Broadway Drug Store, Leonard Remer and Nick C. Corey, partners, and Thomas S. Upshaw, pharmacist-mgr., East Chicago, Ill.—Dexedrine sulfate tablets, metandren linguets, and dextro amphetamine sulfate capsules were dispensed without a physician's prescription. Firm fined $300 and costs; Upshaw fined $100 and costs.

Indiana—Clearwater and McCarty, partnership, and Forrest H. Clearwater and Nathan J. Lane, Rockville, Ind.—Tranquilizer drugs were dispensed without prescription. Firm fined $300; Clearwater, $250; Lane, $50. Costs of $65.10 were assessed defendants generally.

Louisiana—Edgar F. Mayeux, t/a Mayeux Drug Center, Kenner, La.—Barbiturates, amphetamines, and hormones were sold without prescription. Mayeux fined $250, given 6 months' jail sentence suspended, placed on probation for 5 years.

Michigan—Sproat Drug Company, Paul Bloch, pharmacist, Detroit, Mich.—Amphetamines, hormones, and tranquilizers were sold without physicians' prescriptions. Firm fined $750; Bloch fined $250. (Terminated in November but not previously reported.)

New York—Page Drugs, Chas. P. Greenberg and Marvin Goldstein, partners, pharmacists, Bethpage, N.Y.—Cold tablets that can legally be sold without a prescription were substituted for an antibiotic drug called for in a physician's prescription. Greenberg and Goldstein each fined $1,500, given 1-year jail sentence suspended, and placed on probation for 3 years.

These Long Island, New York, pharmacists were convicted of substituting one-cent cold tablets for an antibiotic prescribed for a 16-year-old girl. The girl suffered from chronic bronchitis and was under treatment for an upper respiratory infection, according to her physician. The substitution was discovered in time to prevent possible serious complications.

They were reprimanded by the Federal Court, both at arraignment and at sentencing.

FDA Seizes "Magic" Charms

Belief in magic charms still exists in this modern age of miracle drugs, the Food and Drug Administration said in announcing seizure of copper-colored metal bracelets offered for relief of rheumatism and arthritis. The Lincoln, Nebr., mail order promoter of the "Magic Copper Band" said it came from India and should be worn around the wrist, knee, ankle, or elbow. He bought them for 8 cents each from a legitimate New England novelty manufacturer and promoted them via big city newspaper advertising for $2 until one of the ads caught the eye of an FDA inspector.

Aramite Carcinogenic

The Food and Drug Administration has ruled that no residue of the pesticide Aramite will be permitted on fruit and vegetables moving in interstate commerce. The new order establishes a zero tolerance and rescinds tolerances of one ppm now in effect. The zero tolerance for Aramite became effective Dec. 24, 1958.

The Food and Drug Administration said its action was based on data from animal feeding studies submitted by the manufacturer, Naugatuck Chemical Division, U.S. Rubber Company, which show that *Aramite when fed at levels as low as 500 ppm causes cancer in dogs,* and also that Aramite has been proven to be a carcinogen for the rat.

Communicable Diseases Summary

The number of cases of the communicable diseases shown in the table below are based on reports by Health Officers of each State and of Hawaii and Puerto Rico to the National Office of Vital Statistics of the Department of Health, Education, and Welfare, Washington, D.C. The number of cases of each disease occurring during each of the last 5 weeks are reported and also cumulative totals to date for 1958–1959 and for the corresponding period of 1957–1958. The approximate seasonal low point for each of the diseases is shown in the last column. The 1953–1957 medians will appear next month.

Communicable Disease	Cases Reported for Week Ending					Cumulative Number Since Seasonal Low Week		Low Point
Selected Notifiable Disease	*Dec. 13, 1958*	*Dec. 20, 1958*	*Dec. 27, 1958[b]*	*Jan. 3, 1959*	*Jan. 10, 1959*	*1958–59*	*1957–58*	*(Approximate Seasonal)*
Anthrax	–	–	1[c]	–	–	[g]	[g]	[g]
Botulism	–	–	–	–	–	[g]	[g]	[g]
Brucellosis	13	7	5	14	10	[g]	[g]	[g]
Diphtheria	21	31	23	41	21	633	817	July 1
Encephalitis, infectious	33	22	16	31	26	1,767	1,332	June 1
Hepatitis, infectious, and serum	305	319	254	373	385	5,802	4,558	Sept. 1
Malaria	3	–	1	4	1	[g]	[g]	[g]
Measles	5,384	4,885	4,180	5,991	8,036	59,379	46,170	Sept. 1
Meningococcal infections	58	43	43	51	58	921	1,078	Sept. 1
Meningitis, other	68[a]	65[b]	38	24[f]	42	– – –	– – –	– – –
Poliomyelitis	90	74	58	38	34	5,848	5,423	Apr. 1
Paralytic	59	43	37	27	17	3,012	1,913	Apr. 1
Nonparalytic	15	20	10	8	5	1,960	2,659	Apr. 1
Unspecified	16	11	11	3	12	876	851	Apr. 1
Psittacosis	2	1	3	2	1	[g]	[g]	[g]
Rabies in man	–	1[c]	–	–	–	[g]	[g]	[g]
Typhoid fever	18	19	13	6	13	912	1,044	Apr. 1
Typhus fever, endemic	2	–	3	2	–	64	90	Apr. 1

[a] Includes 15 cases of aseptic meningitis; data includes delayed report from Mont. for week ended Dec. 6. [b] Includes 15 cases of aseptic meningitis; data exclude reports from Fla., Mont., Idaho, N.Mex., and Hawaii for the current week. [c] Reported in S.Dak. [d] Data include report from Fla. for week ended Dec. 20 combined with report for current week, and exclude report from S.Dak. for current week. [e] Reported in Pa. [f] Includes 1 case of aseptic meningitis. [g] Data show no pronounced seasonal change in incidence. Symbols: 1 dash (–): no cases reported; 3 dashes (– – –): data not available.

FTC Actions

Marcy Co.—An order was issued by a Federal Trade Commission hearing examiner which would forbid Walter Marcyan, trading as The Marcy Co., 1398 Sunset Blvd., Los Angeles, to misrepresent that "Dyn-A-Pak Food Supplements" prevent baldness or give energy and endurance to weak and tired persons.

Other Actions

Abbott—Hess Brothers, Inc. has agreed to maintain fair trade prices on the products of Abbott Laboratories it sells in its Allentown, Pa. store.

A stipulation to this effect was approved by District Judge John W. Lord, Jr., of the U.S. District Court for the Eastern District of Pennsylvania on November 20, 1958.

The agreement arose out of a complaint filed by Abbott charging violation of its fair trade prices.

Here's what's newest in pediatric vitamins! *Better order now*

good
new pediatric formula

VITERRA® PEDIATRIC

each 0.6 cc. contains:		M D R Infants	Children
A (synthetic)	5000 U.S.P. Units	333%	167%
D (Calciferol)	1000 U.S.P. Units	250%	250%
B_1 (Thiamine)	1 mg.	400%	133%
B_2 (Riboflavin)	1 mg.	167%	110%
B_6 (Pyridoxine)	1 mg.	††	††
B_{12} (Cyanocobalamin)	1 mcg.	††	††
C (Ascorbic Acid)	50 mg.	500%	250%
Niacinamide	10 mg.	200%	133%
Panthenol	2 mg.		

In a d-sorbitol base for better vitamin B_{12} absorption

††Minimum daily requirement has not been established.

DOSAGE: 0.6 cc. or as directed by physician.

great
new package

new Metered-Flow bottle design measures exact pediatric dosage. Sealed against contamination and loss of potency.

wonderful
convenience for mothers

Shipped to you in colorful display packer. Sells itself! Order now from your usual source of supply.

no dripping
no spillage
no spoilage
no leakage
no need for refrigeration
YES! delicious orange-y taste

VITERRA® PEDIATRIC METERED-FLOW BOTTLE

IN 50 CC. BOTTLES

ALLOW 30 SECONDS BETWEEN DISPENSINGS

ROERIG NEW YORK 17, N. Y. Division, Chas. Pfizer & Co., Inc.

SCIENCE FOR THE WORLD'S WELL-BEING

Members

The Association Extends a Cordial Welcome to the Following Men and Women Who Were Accepted for Active Membership During the Month Preceding Preparation of This Issue.

CALIFORNIA

Leonard H. Stein, Long Beach

COLORADO

A. Joan Kibler, Denver

FLORIDA

David M. Fisler, Miami Beach
George D. McCallum, Jr., Jacksonville

ILLINOIS

Anthony E. Bruni, Chicago Heights
Raymond Mesirow, Chicago
Richard F. Tennery, Danville

INDIANA

Anthony A. Dargis, Michigan City
Donald A. Orcutt, Elkhart

KANSAS

Robert Q. Brookhart, Salina
Roy C. Cheek, Belle Plaine
Richard G. Cook, Iola
N. J. Gessler, Jr., Wichita
Charles C. Jones, Protection
Glenn F. Kaiser, Salina
Lawrence D. Linke, Ellinwood
Hugh T. Polson, Wichita

KENTUCKY

William S. Johnson, Lexington

MASSACHUSETTS

Frank C. Sullivan, Northampton

MICHIGAN

Michael J. Bihon, Saginaw
Margaret R. F. Rubinoff, Detroit
Lillian Walldorf, Wyandotte

MINNESOTA

Ruth Lofstrom, Minneapolis
Margaret Shefveland, St. Paul

MISSOURI

Moses M. Speiser, Kansas City

NEW JERSEY

Jack Weinstock, Elizabeth

NEW YORK

Anthony Berardi, Brooklyn
William H. Eccles, Troy
Sister Marian Patricia, Yonkers

NORTH CAROLINA

Margaret Ann G. Robinson, Winston-Salem
Edward M. Smith, Chapel Hill

OHIO

William A. Dillon, Wickliffe
Anna M. Tercyak, Cleveland

WASHINGTON

June A. Ellison, Seattle

INTERNATIONAL

David R. Kennedy, Toronto, Ont., Canada
Sverrir Magnusson, Hafnarfjordur, Iceland

Obituaries

Abraham N. Levy, 57, passed away December 19 at St. Francis Hospital, Hartford, Conn., after a brief illness. Associate Editor of the Connecticut Pharmacist and active member of the Pharmaceutical Society of Hartford County, Mr. Levy had operated the West Hartford Pharmacy for the last 17 years. Born in Russia, he was educated in the Hartford schools and attended Columbia College of Pharmacy in New York. Mr. Levy was a member of the APhA and of the Connecticut Pharmaceutical Association.

Dr. J. Oren Mikle, 92, believed to be the oldest registered pharmacist in Pennsylvania, passed on November 26 at his home in Tunkhannock. He was a graduate of the Chicago College of Pharmacy, the National School of Chiropractic, and the National College of Medicine. In 1914 Dr. Mikle became associated with the H. F. Clark drug store, where he worked for 5 years, following which he was a production executive for Wyeth for 23 years.

Ralph C. Najarian, 44, Advertising Plans Advisor for Schering Corporation, died on December 23 at his home in Montclair, N. J. Mr. Najarian joined Schering in 1941 as Professional Sales Representative; in 1948 he was appointed Hospital Supervisor of the Central Division; and he became District Supervisor in 1950. Appointed Advertising Manager in 1955, he became Advertising Plans Advisor in 1958. Mr. Najarian was a member of the APhA., the Pharmaceutical Advertising Club, the Hospital Pharmacists Association, and the Medical Exhibitors Association.

Deceased

Jacob Brettschneider, Willimantic, Conn.
H. H. Cline, Wichita, Kans., April 20, 1958
William Goldman, Yonkers, N. Y.
Joseph Hart, Seattle, Wash.
Howell R. Jordan, Austin, Tex., Jan. 7, 1959
Ralph Najarian, Montclair, N. J., Dec. 23, 1958
G. L. Reinhold, Evanston, Ill.
J. Edward Richardson, Detroit, Mich.
Arnold L. Schramm, Albuquerque, N. Mex., Jan. 1958
Alvin Schwartz, Glen Burnie, Md., April 1958
George Orville Young, Buckhannon, W. Va., Dec. 30, 1958 (Life Member)

Howell R. Jordan, 50, Second Vice President and member of the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION, passed away January 7 at his home in Austin, Texas.

Born in 1908 in Williamson County, he received his Ph.G. degree from the University of Texas College of Pharmacy in 1932. In 1933 he opened the first exclusive prescription pharmacy in Austin and eventually became President of Bray & Jordan Pharmacies, Inc.

He joined the AMERICAN PHARMACEUTICAL ASSOCIATION in 1938 and was a member of the Texas State Board of Pharmacy for more than 13 years, holding the offices of Treasurer and President. He was active in the National Association of Boards of Pharmacy, serving on various committees, and as President, 1956–57, and in 1957 he became Executive Committee Chairman. He belonged to Rho Chi, Kappa Psi, the York and Scottish Rite Masons, and the Shriners.

Mr. Jordan was an earnest advocate of the highest type of pharmaceutical service and of progressive standards for the elevation of the profession through more extensive education and strict enforcement of the laws governing the practice of Pharmacy.

Coming Events

American Heart Month—Feb. 1–28, Heart Sunday—Feb. 22

Lincoln's Birthday—Feb. 12

Hospital Pharmacy Seminar—Feb. 13–15, 11th ann., Univ. of Texas College of Pharmacy Library

Valentine's Day—Feb. 14

Iowa Pharmaceutical Association—Feb. 15–17, conv., Hotel Savery, Des Moines

Brotherhood Week—Feb. 15–22

Pharm. Mfrs. Assn., Western Regional Mtg.—Feb. 16–17, Ambassador Hotel, Los Angeles, Calif.

Universal Day of Prayer for Students—Feb. 19

George Washington's Birthday—Feb. 22

President's Day—Feb. 23

Easter Seal appeal—Feb. 27–Easter Sunday, March 29

National Multiple Sclerosis Society—March 9, 1959, New York City

Missouri Pharmaceutical Association—March 15–17, conv., Hotel President, Kansas City, Mo.

Kansas Pharmaceutical Association—March 22–24, conv., Hotel Broadview, Wichita

Pharmaceutical Mfgrs. Association—April 1–3, ann. mtg., Boca Raton, Florida

Nebraska Pharmaceutical Association—April 5–7, conv., Hotel Cornhusker, Lincoln

Germ-free Research Technology Symposium—April 8–9, Lobund Institute, University of Notre Dame, South Bend, Ind.

Hospital Pharmacy Institute—April 9, Univ. of Wis., Madison

Animal Health Institute—April 12–14, 19th ann. mtg., Shoreham Hotel, Washington, D.C.

APhA 1959 Conv.—Aug. 16–21, Cincinnati, Ohio

Book Notices

Aliphatic Fluorine Compounds

By A. M. Lovelace, Douglas A. Rausch, and William Postelnek. Reinhold Publishing Corporation, New York, 1958. x + 370 pp. 15 × 23 cm. Price $12.50.

This book is one of the American Chemical Society monographs. It covers the preparation and properties of all reported organic fluorine compounds other than the aromatic compounds. Each chapter is devoted to a specific class or classes of fluoroorganic compounds such as alkanes, alkenes, alcohols, etc. Physical properties and references are included in the 61 tables of different groups of compounds. References are given at the end of each chapter, and an index is appended.

The Impact of the Antibiotics on Medicine and Society

Edited by Iago Galdston. International Universities Press, Inc., New York, 1958. x + 222 pp. 14 × 21.5 cm. Price $5.00.

This monograph, the second published by the Institute of Social and Historical Medicine of the New York Academy of Medicine, covers a wide field starting with "The Microbiology of the Soil and the Antibiotics," by S. A. Waksman, to "The Effects of the Antibiotics on Society," by L. B. Hobson. Some of the other topics are: historical surveys of early antibacterial and antibiotic concepts, mass production of antibiotics, application to plant and livestock industry, and the extent of their impact on clinical medicine. No index is included.

Drug and Cosmetic Catalog

13th ed. for 1958–59, Drug and Cosmetic Industry, 101 West 31st St., New York 1, N.Y. Price $4.

This publication is useful primarily for its comprehensive indexes for the pharmaceutical industry. It lists private formula and contract packagers, machinery and equipment manufacturers, raw material directory, trade name index, industries, periodicals, suppliers' addresses, associations of the industry, and other miscellaneous tabulations, including a statistical section on raw materials.

Fat Consumption and Coronary Disease: *The Evolutionary Answer to This Problem*

By T. L. Cleave. Philosophical Library, New York, 1958. 40 pp. 12 × 18.5 cm. Price $2.50.

The author suggests two main rules in eating: Eat foods in their natural state (permits simple cooking). Eat foods in strict proportion to the appetite (mixtures only in accordance with personal tastes).

Pharmacology in Medicine

2nd ed. Edited by Victor A. Drill. McGraw-Hill Book Company, Inc., New York, 1958. xi + 1243 pp. 21.5 × 28 cm. Price $19.50.

This second edition of a very good collaborative textbook designed for students and practitioners of medicine is presented in the same manner and style as the first edition, which was reviewed in THIS JOURNAL, **44,** 255 (1955). The text material has been revised to include later information, and a new chapter on Drugs Affecting Behavior has been added. Chapter 40 was included as an Addendum in order to incorporate the recently marketed oral diuretic chlorothiazide (Diuril). The second edition merits the high opinion expressed for the original publication.

Poisoning by Drugs and Chemicals: An Index of Toxic Effects and Their Treatment

By Peter Cooper, F.P.S., Alchemist Publications, 25 Oxford Street, London, W. 1, 1958. 209 pp. Price 25s.

The object of this book is to provide doctors, pharmacists, chemists, etc. with a ready-reference guide, neither too detailed nor too elaborate, to the toxicology of the commonly handled drugs and chemicals. The book has been compiled from an extensive collection of reports of actual poisoning cases combined with facts previously only to be found dispersed through a number of reference books.

The main part of the book consists of some 350 alphabetically-arranged monographs on individual substances from acetazolamide to zinc. Each monograph gives the alternative (including proprietary) names of the compound, followed by notes on its action, absorption, and excretion in the body, its toxic effects, possible effects of massive overdose, suggestions for treating cases of poisoning with the compound, and simple aids to identification. An appendix discusses the more important first-aid measures for use in cases of poisoning, e.g. artificial respiration, gastric lavage, use of emetics and universal antidotes, etc.

The 15-page index includes generic names, proprietary names, chemical names, and synonyms, permitting immediate reference to the appropriate monograph.

The format is compact, and its distinctive yellow binding makes it possible for the book to be picked out quickly when needed in an emergency.

Principles of Research in Biology and Medicine.

By Dwight J. Ingle. J. B. Lippincott Company, Philadelphia, 1958. xv + 123 pp. 15 × 23 cm. Price $4.75.

This book is directed to students who are preparing for or are beginning research in macrobiology and medicine. It is written in a style that should hold the student's interest while informing him of the proper mental approach to scientific experimentation in general and to the selected field in particular. The author states: "The student of truth must also study error..." and he gives 28 fallacies that apply to experimentation. It is a good book for any experimentater.

Professional Pharmaceutical Personnel in Texas Pharmacy

By Esther J. W. Hall, Ph.D. Pharmaceutical Foundation, College of Pharmacy, Univ. of Texas, Austin 12, Texas. 1958. 87 pp. Price $2.

Eight chapters covering the problem and the challenge; the importance of manpower information; the educational system and the training of pharmacists; the characteristics of existing professional pharmaceutical personnel in Texas; distribution analysis of physicians, pharmacies, and pharmacists in Texas; potential supply of professional pharmaceutical personnel; implications of sex and race in Texas Pharmacy; and compensation and incentives for professional pharmaceutical personnel in Texas Pharmacy.

An Inexpensive Science Library

2nd ed. 1958. Compiled by Hilary J. Deason. American Association for the Advancement of Science and The Science Foundation, Washington, D.C. 38 pages. Price 25¢.

This booklet contains a selected list of paperbound science books compiled by the Director of the High School Science Library Program, under the auspices of the American Association for the Advancement of Science and The National Science Foundation. Addresses are given for the publishers of every book listed, and an author index, as well as a title index, is provided.

Toys, the Tools of Children

National Society for Crippled Children and Adults, 11 S. LaSalle St., Chicago 3, Ill. 16 pp. Price $1.

Profusely illustrated and carefully charted, this flexible toy selection guide can be used for all children—normal or handicapped.

Prescription Practice

by Samuel W. Goldstein

℞ *Information Service*

Borax, Boric Acid, Menthol, Thymol, and Oils in Powder for Eye Wash

What is the best way to fill the following powder for use, 1 teaspoonful to a pint of water, as an eye wash? Would it be bad practice to compound this formula in bulk: Boric acid 2, borax 22, menthol 0.1, thymol 0.1, ol. gaultheria 0.2, and ol. eucalyptus 0.2?—S.B., New York.

The formula given modifies Lancaster's preparation for eye wash by halving the amounts of the volatile ingredients (see *Pharmaceutical Recipe Book*, APhA, 3rd ed., 1943, p. 86). The stated directions in PRB are: "Triturate the powders intimately with the oils until uniform." The efficiency of, and the time required by, the procedure in which the powders are added to the solution of the eutectic and oils can be checked approximately by addition of a dye to the oil solution. Some of the factors to be considered before compounding a large amount of this type of mixture are: is equipment available that will yield a uniform mixture of the desired amounts of ingredients; what amounts of volatile materials must be used to insure the composition of the product; are proper containers available, preferably of dispensing size, that will prevent loss or alteration of ingredients.

Magnesium Sulfate Paste

A physician wants magnesium sulfate paste for use in treatment of boils. We have a formula for magnesium sulfate 3 parts and glycerin 1 part, which does not yield a satisfactory product. Can you explain.—G. H., Washington, D.C.

Magnesium sulfate paste BPC (Morison's paste) is an anhydrous combination of $MgSO_4$ (dried at 100°C.) 4.5 parts and glycerin (heated to 120°C. for 1 hr. and cooled) 5.5 parts, with or without 0.5% phenol. The solution of phenol in glycerin is mixed with the dried $MgSO_4$ in a warm mortar. The paste should be kept in well-closed containers or collapsible tubes. According to the "Extra Pharmacopoeia" (Martindale), 23rd ed., vol. **1**, 1952, p. 694, the paste "Was originally advocated for the treatment of wounds, later for boils and carbuncles. The paste is applied to the boil or carbuncle, and is covered with lint or gauze and a waterproof material. The dressing is renewed at intervals until a slough has separated."

Methylparaben Sodium

Comment on parahydroxybenzoate sodium in THIS JOURNAL, **19,** *686(1958), suggested extemporaneous preparation of the sodium derivative when required in formulations.*

The sodium derivatives of methylparaben (methyl *p*-hydroxybenzoate) and propylparaben are available under the trade names Methyl Chemosept Sodium and Propyl Chemosept Sodium from Chemo Puro Mfg. Corp., 150 Doremus Ave., Newark 5, N.J.

Panadol, Paracetamol

We have a request for tablets of Panadol containing Paracetamol. Can you help us?—J. B., Maryland.

Panadol is a British trade mark for tablets containing the analgesic N-acetyl-*p*-aminophenol for which a British generic name is paracetamol. The generic name in the U.S. is acetaminophen (title assigned for NF XI). It is frequently designated as APAP. American trade names already assigned to products of acetaminophen are: Apamide (Ames), Fendon (A.P. Co.), Nebs (Norwich), Tempra (Mead Johnson), and Tylenol (McNeil). It is being used as an ingredient in drug mixtures.

Peremesin

We have a Swiss prescription for Peremesin. It is prescribed for travel sickness. What is it?—M. L., Washington, D.C.

"Gehes Codex" (1953) lists Peremesin as a cerium oxalate complex, the 100-mg. tablets containing 50 mg. cerium oxalate. It is recommended as an antiemetic and antinauseant. Cerium oxalate BPC 1949 is described as a powder consisting of about 50% cerium oxalate, with the oxalates of other rare earths. The "U.S. Dispensatory," 25th ed., 1955, p. 1622, notes that the insoluble cerium oxalate probably acts like the insoluble bismuth salts to form a protective coating over the mucous membrane of the stomach when used in large quantities.

Sulfamylon 5% W/Methylcellulose and Boric Acid

How should we fill the following prescription?—R. G., Virginia.

5% Sulfamylon 15.0
1% Methylcellulose acidified to 2 to 5 pH c Boric Acid.

In addition to the 5% Sulfamylon solution, Winthrop Labs. markets a 5% Sulfamylon viscous solution containing 1% methylcellulose. If only the plain solution is available, proceed as follows: Dissolve 0.3 Gm. of boric acid in the 15 cc. of Sulfamylon solution, heating to 75–80°C. on a bath. Incorporate the 0.15 Gm. of methylcellulose with stirring, cool to room temperature with stirring, and place in a refrigerator until clear (about 30 minutes). If the Sulfamylon viscous solution is used, dissolve the boric acid with the aid of heat. The turbid product becomes clear on refrigeration.

Sulfachrysoidine

A physician wants us to prepare an ointment containing, among other chemicals, Sulfachrysoidine. Can you give information and a source for this drug?—H. S., Nebraska.

Sulfachrysoidine was included in the list of International Non-Proprietary Names (of drugs in commerce) by the WHO Committee 7 (Sept. 12, 1952). The publication *Unlisted Drugs*, **4**, 163(Nov. 30, 1952), included sulfachrysoidine and gave the chemical name as diaminosulfonamidocarboxyazobenzene. The "Merck Index," 6th ed., 1952, p. 321, lists the compound as 3,5 - diamino - 2 - [4′ - (sulfamyl phenyl)azo]benzoic acid, and gives as synonyms: carboxysulfamidochrysoidine, Rubinazol, Rubiazol, and Prontosil III. Rubiazol (Roussel Labs.) was described in the "Extra Pharmacopoeia" (Martindale), 23rd, ed., Vol. 1, 1952, p. 947, as: "Tablets each containing carboxysulfamido chrysoidine 0.2 Gm. It is used similarly to sulfanilamide." Reference to the drug and its source was omitted from the 24th ed. published in 1958.

Rubiazol differs from the original sulfonamide azo dye, Prontosil red (4′ - sulfamido - 2,4 - diaminoazobenzene) which was marketed as Neoprontosil (Winthrop), by addition of a carboxyl group in position 6 of the 2,4-diaminoazobenzene ring. After it was proved that the sulfanilamide moiety of the molecule was as effective as Prontosil in infections, the simpler compound and then the later sulfonamides replaced Prontosil.

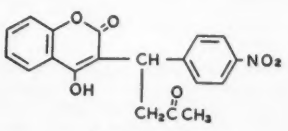
The Sulfachrysoidine in the ointment formula might be replaced with another nonsensitizing sulfonamide, if the physician will consent to the change.

New and Nonofficial Drugs

Items Recently Evaluated by the American Medical Association Council on Drugs.

Acenocoumarol

Sintrom (Geigy); 3-(α-Acetonyl-4-nitrobenzyl)-4-hydroxycoumarin.



Acenocoumarol

Actions and Uses: Acenocoumarol, a synthetic coumarin-type anticoagulant, depresses prothrombin activity as measured by both the one-stage and the two-stage methods. It is the most potent drug available in its class. With oral dosage, the peak of activity is reached within 24 to 48 hours, followed, upon discontinuation, by a rapid decline of activity and restoration of normal prothrombin levels within another 48 hours. Thus, acenocoumarol acts distinctly faster than bishydroxycoumarin but not quite as fast as ethyl biscoumacetate.

Acenocoumarol is used in the same manner and with the same precautions as other anticoagulants for the prophylaxis and treatment of intravascular clotting. In most cases, its rapid decline of activity permits treatment of overdosage by simple omission of the next scheduled dose. If actual hemorrhage does occur, this can be checked promptly by the administration of phytonadione (vitamin K_1). Although it contains a nitrobenzene group, acenocoumarol apparently does not cause depression of hematopoiesis. Gastrointestinal irritation is only rarely encountered. Acenocoumarol does not discolor the urine. (See the general statement on anticoagulants in NND.)

Dosage: Acenocoumarol is administered orally. The induction dose is 16 to 28 mg. on the first day of therapy followed by 8 to 16 mg. on the second day. Maintenance dosage is governed by individual response, as reflected by frequent prothrombin time determinations. The average maintenance dose ranges from 2 to 10 mg. per day.

Preparations: tablets 4 mg.

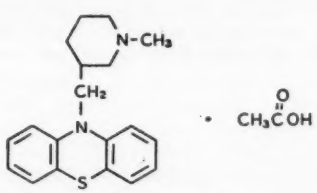
Mepazine Acetate

Pacatal Acetate (Warner-Chilcott); 10-[(1-Methyl-3-piperidyl) methyl]-phenothiazine acetate.

Actions and Uses. Mepazine acetate has the same actions and uses as mepazine HCl, except that it is administered parenterally. (See the monograph on mepazine HCl.)

Dosage. Mepazine acetate is administered by injection. For severely agitated psychotic patients, the dose by either route is 50 mg. 3 or 4 times daily. For the treatment of severe nausea and vomiting, daily doses of 25 to 75 mg. are injected. Dosage for use in surgical and obstetric patients has not been firmly established, but single doses ranging from 50 to 200 mg. or more have been employed.

Mepazine acetate may be injected parenterally either as the full-strength solution or as a diluted solution. Chloride or alkaline solutions should not be used as diluents since they cause precipitation of mepazine acetate. Oral therapy with the HCl salt should be substituted for parenteral injection as soon as possible.



Mepazine Acetate

Preparation: solution (injection) 50 mg. in 2 cc.

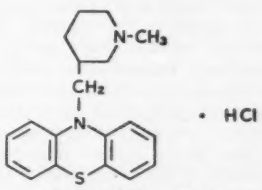
Mepazine Hydrochloride

Pacatal Hydrochloride (Warner-Chilcott); 10-[(1-Methyl-3-piperidyl)-methyl]phenothiazine.

Actions and Uses. Mepazine HCl is a phenothiazine derivative with actions and uses similar to, but not identical with, those of chloropromazine. Although less potent, mepazine is not merely a weak chlorpromazine. Pharmacological studies indicate that it differs from chlorpromazine in that it does not lower the body temperature in rats as does chlorpromazine; it does not antagonize the waltzing syndrome in mice as does chlorpromazine; and it augments carotid sinus reflexes in cats whereas chlorpromazine inhibits them. The significance of these differences with respect to its clinical usefulness is, at present, unclear. The drug is used principally for its calming or tranquilizing action in the management of neuroses and psychoses in which anxiety, tension, agitation, and increased psychomotor activity are predominant; it is said to exert a selective action to normalize the thinking process of mentally or emotionally disturbed patients. Because mepazine is less potent than chlorpromazine, it does not produce the excessive sedation, drowsiness, and depression which frequently accompany therapy with the latter drug. On the other hand, the diminished potency of mepazine makes it less effective than chlorpromazine for the long-term control of the most severe forms of agitation and tension; it has little or no immediate effect on acute psychotic disturbances. In terms of overall psychotherapeutic effectiveness, mepazine might be considered to be intermediate between the most potent agents such as chlorpromazine and the milder agents such as meprobamate.

Like chlorpromazine and other phenothiazine derivatives, mepazine HCl exerts an antiemetic effect and may be used for the control of nausea and vomiting from a variety of causes. Tne drug has also been used for its calming effects in surgery, in obstetrics, and in anesthesia. Other reported clinical applications include use in narcotic withdrawal to control restlessness and agitation, in chronic alcoholism to lessen anxiety and tensions, and in advanced neoplastic states to reduce the quantity of narcotics needed for control of pain. However, sufficient evidence is not available to establish its usefulness for the latter purposes.

The acute toxicity of mepazine HCl in experimental animals is less than that of chlorpromazine HCl, and, in general, its clinical use is followed by a somewhat lower incidence of side-effects and untoward reactions. As already indicated, the usual doses produce a calming effect, with little sedation and drowsiness. Although jaundice has not as yet been observed with adminstration of mepazine, physicians should be alert to its possible occurrence. The drug should not be given to patients with a history of jaundice or liver damage. The most frequent side-effects of mepazine are atropine-like in nature and include blurring of vision, dryness of the mouth, and constipation. Since constipation can lead to more serious forms of intestinal obstruction, it should not be neglected; if necessary, laxatives should be prescribed. Less frequent side-effects include occasional dizziness, tremor, urinary retention, and transient hypotension. The most serious toxic reaction to mepazine is referable to hematopoietic depression. As with chlorpromazine, the drug can produce leukopenia and granulocytopenia. It should, therefore, be used with discretion; peripheral blood cell counts are indicated at frequent intervals during therapy, and pa-



Mepazine Hydrochloride

Continued on page 104

tients should be advised to report to the physician immediately upon the onset of fever, sore throat, or marked weakness. Because it potentiates the action of other central nervous system depressants, mepazine is contraindicated in patients under the influence of large doses of narcotics, barbiturates, or unknown large quantities of alcohol.

Dosage. Mepazine HCl is administered orally. For the treatment of ambulatory neurotic patients, the usual initial dose is 25 mg. 3 or 4 times daily. This dosage can be increased every week by increments of 25 mg. per day until the desired effect has been attained. For those psychiatric conditions which are severe enough to require hospitalization of the patient, the initial dose is 100 mg. per day; this may be increased by 50 mg. every five to seven days. Maintenance dosage for such patients is usually 400 mg. per day or more.

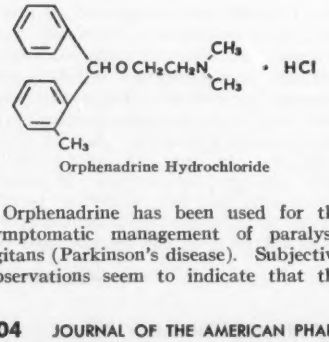
For the treatment of nausea and vomiting, the dosage ranges from 50 to 100 mg. per day. Dosage for use in surgical and obstetric patients has not been firmly established; single doses ranging from 50 to 200 mg. or more have been employed.

Preparation: tablets 25, 50, and 100 mg.

Orphenadrine Hydrochloride

Disipal (Riker); N,N-Dimethyl-2-(*o*-methyl-α-phenylbenzyloxy) ethylamine.

Actions and Uses. Orphenadrine HCl the *o*-methyl analogue of the antihistamine, diphenhydramine HCl, produces a reduction of voluntary muscle spasm. The effect is central, presumably by an inhibitory action on cerebral motor areas, and resembles the central effects of atropine. Orphenadrine exerts only weak antihistaminic and sedative effects. It is not primarily a peripherally acting anticholinergic agent since, in therapeutic doses, it produces few of the typical effects on smooth muscle, the eye, or secretory glands which characterize atropine and other peripheral parasympathetic blocking agents. The skeletal muscle relaxation is not of the type produced by mephenesin or zoxazolamine, since there is no evidence that it interrupts transmission through peripheral neuromuscular pathways. Nor is there any indication that it acts at the myoneural junction in the manner of the curariform drugs; it does not cause ganglionic blockade.



Orphenadrine Hydrochloride

Orphenadrine has been used for the symptomatic management of paralysis agitans (Parkinson's disease). Subjective observations seem to indicate that the drug may bring about beneficial effects in approximately half of the patients so treated. Rigidity is apparently relieved much more readily than is tremor; in occasional patients with severe spasticity, tremor may even be accentuated as the spasticity is relived. Other salutary effects ascribed to the action of the drug include relief of oculogyria, sialorrhea, diaphoresis, blepharospasm, and disturbances in gait and balance. The drug also exerts a euphoriant effect which is useful in combating the depression and fatigue that frequently accompany this syndrome. In common with other antiparkinsonian drugs, the therapeutic effectiveness of orphenadrine diminishes with prolonged use. For this reason, and because it is considered somewhat less active than other antiparkinsonian drugs, orphenadrine is probably best employed as an adjunct to such other agents as procyclidine, trihexyphenidyl, cycrimine, or benztropine for the treatment of paralysis agitans. It may, however, be tried alone for patients who have become refractory to the other antiparkinsonian drugs.

Because of its antipastic effect on voluntary muscle, orphenadrine has been proposed for use in a variety of clinical conditions which may be unrelated in etiology but in which pain due to skeletal muscle spasm is present. These have been described as sprains, strains, fibrositis, whiplash injuries, noninflammatory rheumatic and arthritis states, and torticollis. Although such use might be considered a logical clinical application of the drug's pharmacological action, the evidence available to date is not adequate to permit a sound conclusion as to the ultimate effectiveness of such therapy. Further studies are also needed to confirm the possible usefulness of orphenadrine in the treatment of the extrapyramidal involvement associated with high doses of reserpine or phenothiazine-type tranquilizing agents.

The clinical toxicity of orphenadrine HCl appears to be low, at least with therapeutic doses. Thus far, side-effects have been limited to nausea, dryness of the mouth, dizziness, mild excitation, and occasional hallucinations. Most of these effects tend to subside or disappear with a reduction in dosage. Because of its anticholinergic classification, orphenadrine should be administered cautiously to patients with glaucoma, tachycardia, or urinary retention.

Dosage. Orphenadrine HCl is administered orally. The usual initial dose is 50 mg. given three times a day. This dosage should then be adjusted according to the clinical response of the individual patient and the appearance of side-effects.

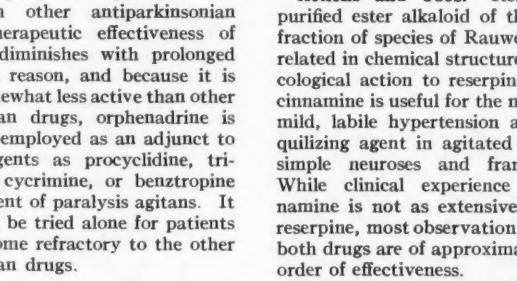
Preparation: tablets 50 mg.

Rescinnamine

Moderil (Pfizer); 3,4,5-Trimethoxycinnamic acid ester of methyl reserpate.

Actions and Uses. Rescinnamine, a purified ester alkaloid of the alseroxylon fraction of species of Rauwolfia, is closely related in chemical structure and pharmacological action to reserpine. Thus, rescinnamine is useful for the management of mild, labile hypertension and as a tranquilizing agent in agitated patients with simple neuroses and frank psychoses. While clinical experience with rescinnamine is not as extensive as that with reserpine, most observation sindicate that both drugs are of approximately the same order of effectiveness.

Although all the side-effects and toxic reactions that occasionally follow the administration of reserpine have been reported after therapy with rescinnamine,



Rescinnamine

the incidence and severity of some of these may be less with the latter agent. Sedation and bradycardia, in particular, appear to occur less frequently and in milder form with rescinnamine. The incidence of other side-effects such as weakness and fatigue, nasal congestion, dizziness, confusion, increased appetite, and weight gain is about the same with both agents; in some patients, the severity of these effects may be slightly less with rescinnamine than with reserpine. Both drugs should be used with the same precautions, and both are subject to the same contraindications. (See the monograph on reserpine in NND.)

Dosage. Rescinnamine is administered orally. For the treatment of mild hypertension or simple neuroses, initial doses of 0.5 mg. twice daily for two weeks have been employed. Thereafter, daily dosage requirements are either reduced or increased by increments of 0.25 mg., depending on therapeutic response and appearance of side-effects. While information available to date is not adequate to establish the dosage of rescinnamine for the treatment of institutionalized psychotic patients, daily amounts ranging from 3 to 12 mg. have been employed, apparently with satisfactory results.

Preparations: tablets 0.25 mg. and 0.5 mg.

Progress in Medicine

Aspirin and Fecal Blood

Tests with a 0.75% benzidine solution for occult blood in the feces of 140 rheumatic patients and 40 healthy subjects gave positive results in about 70% of the individuals after daily ingestion of 1.5–3 Gm. of aspirin in tablet form, according to a report by L. Th. F. L. Stubbé, *Brit. Med. J.*, **2,** 1062(1958). The occurrence and relative amount of blood found was not influenced strongly by the quantity of aspirin administered, and identical results were obtained with a small group of subjects when the aspirin was given as an aqueous suspension or tablet. Twenty patients were given only enteric coated aspirin tablets and only 5 showed a negative benzidine reaction. Dr. Stubbé notes that he is not in a position to say whether any of the tablets were imperfectly coated, and he states: "Even with a good (enteric) coating there is, however, the possibility of occult loss of blood due to irritation of the intestinal mucosa, about which nothing is known." The physician concludes: "When occult blood is found in the feces without known cause it is necessary, in the first place, to preclude the possibility that this might be occasioned by aspirin before carrying out an extensive analysis with, among other things, a complete X-ray examination. We must also consider aspirin as being the possible causal factor (as in one of our own cases) when a case of serious anemia occurs in which a negative benzidine reaction can be found due to the discontinuance of the drug."

Detection of Phenylketonuria

Phenylketonuria is detected in infants of 4–6 wks. by addition of a drop of 10% ferric chloride solution to filter paper that has been wet with the baby's urine and then dried. When the green color that is formed when phenylpyruvic acid is present is not definite, the presence of *o*-hydroxy phenylacetic acid can be detected by the procedure of H. K. Berry, *et al.*, *J. Am Med. Assoc.*, **167,** 2189(Aug. 30, 1958). The latter substance is excreted in large amounts in urine of persons with phenylketonuria. To test for it, cut a 0.5-in. square from the paper with the absorbed and dried urine, staple it 1 in. from the bottom of a piece of chromatographic filter paper 7 in. high, roll the paper to form a cylinder with the urine paper inside, place in a solvent of isopropanol-ammonia-water (8:1:1) for ascending chromatography for 6 hrs. or until the solvent reaches the top, remove, dry, and spray with a mixture of diazonized sulfanilic acid and sodium carbotate. In phenylketonuric urine an orange spot of *o*-hydroxyphenylacetic acid appears approximately 4 in. above the position where the urine paper is stapled to the chromatogram. In normal urine no spot is seen. Aspirin and acetoacetic acid do not interfere with the test. In the case of a child with phenylketonuria who was treated with a phenylalanine-low diet, the ferric chloride test was negative the day after treatment started but *o*-hydroxyphenylacetic acid was detected until the sixth day thereafter.

Fluoxymesterone in Breast Cancer

Treatment of 48 breast cancer patients, who had no previous hormone therapy, with daily oral dosage of 20 or 40 mg. of fluoxymesterone (Halotestin) for 15 days to 17 months caused objective regressions of metastatic cancer in 18 (37.5%) and subjective improvement in 25 (58%) of the patients, according to Dr. B. J. Kennedy, *New Engl. J. Med.*, **259,** 673(1958). The antitumor effect of the halogenated androgen appears to be at least equal to that of testosterone propionate and with less masculinizing changes with the fluoxymesterone. Dr. Kennedy considers fluoxymesterone to be the present androgen of choice in the treatment of advanced breast cancer.

Humatin Trial in Amebiasis

A group of 65 patients with intestinal amebiasis were treated orally with the antibiotic Humatin (Parke, Davis) in amounts ranging from 5–50 mg./Kg. body weight for periods of 1 to 5 days by Dr. C. H. Carter who reported his observations at a meeting of the Am. Soc. Tropical Med. and Hygiene, Nov. 6, 1958, at Miami. He found that 45 patients, or 92% of those who received Humatin doses of 12.5 mg./Kg. of body weight and more for 5 days, developed consistently negative stools during the observation period. Smaller doses were inadequate. No side effects were noted. Further study is recommended.

Hydrocortisone—Deleterious Effect of Intra-articular

Clinical observations on 18 patients, with rheumatoid arthritis of the knees, each of whom were given over a 48-week period intra-articular injections of hydrocortisone acetate (4), hydrocortisone tertiary butyl acetate (4), and a placebo (4), are reported by Drs. G. N. Chandler and V. Wright, *Lancet*, **2,** 661(1958). Both drugs showed significant advantage over placebo by physical grading and functional capacity of the 25 treated knees. It was noted, however, that radiographs showed radiological deterioration in 13 joints despite clinical improvement. Only in walking time was a significant difference apparent, with better performance in the deteriorated group. The chief cause for the radiological progression appeared to be directly related to the success of hydrocortisone in sustained alleviation of the arthritic symptoms. The physicians relate this to " the encouragement of a damaging level of performance by interference with a normal, locally protective mechanism."

Hydrocortisone Hemisuccinate Sodium in Local Treatment of Ulcerative Colitis

A controlled trial of the treatment of groups of 20 ulcerative colitis patients with rectal drips containing, in 120 ml. of saline rectal drip, 100 mg. of hydrocortisone as the hemisuccinate sodium ester and a placebo, is reported by Dr. S. C. Truelove, *Brit. Med. J.*, **2,** 1072(1958). After 1 week the patients receiving hydrocortisone therapy showed a striking advantage over the placebo group. All the patients were then treated locally with a combination of the hydrocortisone compound and an antibiotic for 2 weeks, when about three-fourths of them were in clinical remission. Compared with other studies without antibiotics, addition of neomycin, or penicillin and streptomycin seemed to confer a small gain in the number of successes with topical hydrocortisone therapy. Week end maintenance therapy with local hydrocortisone was ineffective in reducing the chance of relapse.

In another study on the topical use of hydrocortisone hemisuccinate sodium in ulcerative colitis, by Dr. G. Watkinson, *ibid.*, **2,** 1077(1958), the majority of patients receiving the drug improved while those receiving inert therapy worsened.

Iproniazid in Ischemic Angina Pectoris

Forty patients with severe angina pectoris from occlusive coronary atherosclerosis were given iproniazid 50 mg.

Continued on page 106

2–3 times daily, in addition to other routine treatment, by Drs. M. K. Towers and P. Wood, *Brit. Med. J.*, **2,** 1067(1958). Iproniazid was found to be effective in reducing the frequency and severity of anginal attacks. It appeared to act by blocking pain and not by improving coronary circulation. Side-effects were common after 1 to 4 weeks of treatment, the commonest was giddiness (15 patients), and 2 patients developed pulmonary edema. Because the blocking of angina might encourage patient activity which could precipitate infarction, and considering the side-effects, the physicians do not recommend iproniazid for patients with mild angina pectoris. They do recommend it in severe and intractable angina, expecially if anticoagulant therapy can be given in addition.

In another report, Drs. C. Papp and S. Benaim, *ibid.*, **2,** 1070(1958), discuss the side-effects attributed to iproniazid in 2 patients with angina. They suggest that pethidine should be used with caution in patients on iproniazid.

Ristocetin in Staphylococcic Endocarditis

Two cases of hospital-acquired staphylococcic bacterial endocarditis in which the patients were treated with ristocetin and erythromycin, with clinical and bacteriological cures, are reported by Dr. R. W. Weber, *J. Am. Med. Assoc.*, **168,** 1346(1958). Severe leukopenia and neutropenia occurred in both patients after the use of 44 and 42 Gm., respectively, of ristocetin in 13 days. The hemoglobin levels and platelet counts remained normal. The white blood cell counts gradually returned to normal limits. Thrombophlebitis also developed in both patients during i.v. administration of the antibiotic. The thrombophlebitis was severe and was responsible for persistence of fever in 1 patient. Dr. Weber concludes: "Ristocetin is a valuable antibiotic in the treatment of serious hospital-acquired staphylococcic infections."

Ristocetin in Staphylococcic Pneumonia

Ristocetin (Spontin) was used effectively in the treatment of 17 hospital cases of antibiotic-resistant staphylococcic pneumonia by Drs. G. L. Calvy and L. R. Schumacher, *J. Am. Med. Assoc.*, **167,** 1584(1958). Careful attention to dosage (15–30 mg./Kg. body weight daily) and administration (dose dissolved in 30–100 ml. 5% glucose and administered in an i.v. infusion system in 10–30 min.) is mandatory to minimize toxic side-effects. Effects on the hematopoietic system are more likely to occur when dosage exceeds 25 mg./Kg. body weight daily. Blood cell counts should be determined on alternate days during therapy. Depression of the white blood cell count calls for a reduction in dosage, or withdrawal of therapy in severe cases. Because ristocetin is excreted by the kidney, renal integrity should be checked in each case. Patients with renal impairment, very old persons, and very young persons should receive a reduced dosage. With proper precautions, ristocetin is believed to be a safe and potent agent against staphylococcic infections.

Ristocetin in Staphylococcal Sepsis with Bacteremia

The unsuccessful treatment with ristocetin of 3 cases of sepsis with bacteremia caused by *Staphylococcus aureus* is reported by Drs. L. A. Rantz and E. Jawetz, *New Engl. J. Med.*, **259,** 963(1958). The serum of 2 patients was bacteriostatic and bactericidal for the causative organism at the very time that it could still be isolated from the blood. The physicians, working independently, were unable to determine inhibitory and bactericidal concentrations of the drug *in vitro* consistently. They state that their observations ". . .suggest that a serious and unknown defect in the mode of action of this drug must protect the microorganism from its effect."

Serum Cholesterol—Reliability of Measurements

Serum cholesterol measurements should be interpreted cautiously in relation to atherosclerosis, according to a report by Dr. A. U. Rivin, *et al.*, *J. Am. Med. Assoc.*, **166,** 2108(1958). Results from 5 clinical laboratories on duplicate samples from 3 patients with myocardial infarction ranged from 311-598, 183-296, and 172-312 mg./100 cc. of cholesterol, respectively. The report states: "The physician who prescribes dietary or other treatment for patients with elevated serum cholesterol levels and who wishes to follow results intermittently should use the same laboratory throughout. He should recognize that, to be of significance, a cholesterol level checked one time after therapy, must decrease about 100 mg./100 cc., or else there must be a lesser decrease of about 60 mg./100 cc. which is consistently maintained."

Sterilization of Local Anesthetics

A survey of the hospitals in the State of Washington (101 out of 121 reported) showed that 33 out of 101 hospitals autoclaved solutions of local anesthetic drugs before use, while the other 68 depended on cold sterilization of the outside of the container by immersion in a germicidal solution. The report by Drs. L. D. Bridenbaugh and D. C. Moore cites their experience with 17,368 regional block procedures and gives their conclusion that the commonly used local anesthetics in their containers should be autoclaved for 30 minutes at 255–260°F. and 18–20 lb. pressure (124–147°C. and 1.22–1.36 atmos. above ambient pressure) to reduce the danger of bacterial contamination and simplify both the preparation of regional block trays and the execution of regional block anesthesia.

Tes-Tape Estimation of Urinary Glucose

Estimations of glucose in urine by dipping the Tes-Tape in the sample, removing and allowing 1 minute for color development, permitted reliable semiquantitative interpretations at concentrations of 0.5% (3+) or less, but were seriously inadequate in detecting concentrations of 2% or more (4+), according to Dr. H. S. Seltzer and M. J. Loveall, *J. Am. Med. Assoc.*, **167,** 1826 (1958). The color reaction occurs in two stages: β-D-glucose (in voided urine) + oxygen (air) react with glucose oxidase (on tape) to form gluconic acid + hydrogen peroxide; the peroxide + *o*-tolidine (on tape) react with a second enzyme, peroxidase (on tape), to give the blue color (oxidized *o*-tolidine) + water. It is stated that additional directions for use of Tes-Tape should include: "The strip should be laid flat against a white background before reading. If the 1-minute reading is 0.5% (3+) or more, a final reading should be made at 2 minutes." It is also noted that 1-minute readings are more accurate than 2-minute readings with glycosuria of 0.5% (3+) concentration or less due to overdevelopment of the color during the second minute.

Vitamin B_{12} Depot Injection

The vitamin B_{12} excretion in 6 young adults was determined following i.m. injection of a 1-mg. dose of the vitamin in either water, sesame oil, or sesame oil with 2% aluminum monostearate. The results reported by A. Arnold, *et al.*, indicate almost complete excretion of B_{12} in 24 hrs. after the water or the sesame oil injections; but with the oil plus aluminum monostearate vehicle significant amounts of B_{12} were still being excreted after 4 days, and at 14 days the urinary excretion of B_{12} was back to pretest levels. A 16% gelatin vehicle did not have a depot effect with B_{12} although it is used as an injectable vehicle for ACTH.

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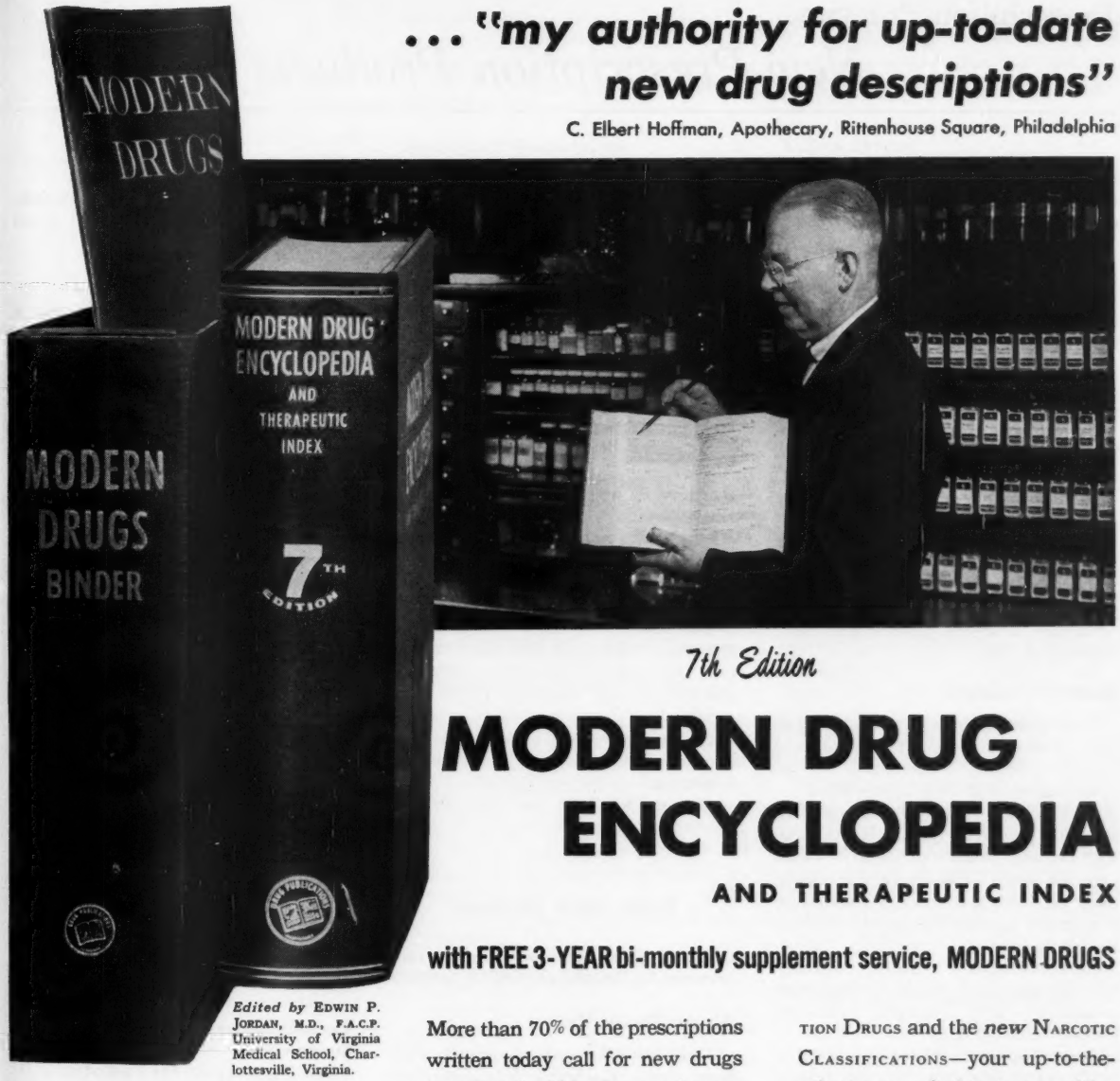

Edited by EDWIN P. JORDAN, M.D., F.A.C.P. University of Virginia Medical School, Charlottesville, Virginia.

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APA-29

Prescription Practice

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Caytine Tablets, Inhalation, and Injection

Description: Each scored tablet contains 2 mg. Caytine, chemically α(α-methyl-3,4-methylenedioxyphenethylamino)-methylprotocatechuyl alcohol hydrochloride, alone or with 32 mg. pentobarbital. The inhalation is a 1:100 solution. The injection contains 0.5 mg. per cc.

Indications: For prompt and prolonged relief in asthma, emphysema, bronchitis, and bronchiectasis.

Administration: Individualized by physician.

Form Supplied: Tablets (plain or with pentobarbital) in bottles of 50. Inhalation, 10-cc. dropper bottles. Injection, 1-cc. ampuls, 4 to a box.

Source: Lakeside Laboratories, Inc., Milwaukee, Wis.

Diabinese Tablets

Description: Each scored tablet contains 100 mg. or 250 mg. Diabinese (chlorpropamide), chemically 1-(*p*-chlorobenzenesulfonyl)-3-propylurea.

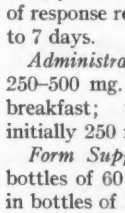
Indications: Hypoglycemic agent in selected patients; particularly those with diabetes of adult or maturity-onset type not controllable by dietary regulation, yet mild and stable. Evaluation of response requires therapeutic trial up to 7 days.

Administration: Orally, initially 250–500 mg. daily in single dose with breakfast; with geriatric diabetics, initially 250 mg. daily.

Form Supplied: 250-mg. tablets in bottles of 60 and 250; 100-mg. tablets in bottles of 100.

Source: Pfizer Laboratories, Brooklyn 6, N.Y.

Oleandomycin Parenteral



Description: Each vial contains 500 mg. oleandomycin, as the phosphate salt, to be mixed with a suitable diluent just before use.

Indications: Treatment of severe infections, including those due to most streptococci and resistant staphylococci.

Administration: By i.v. or i.m. injection after dilution.

Form Supplied: 500-mg. vials.

Source: J. B. Roerig and Co., New York 17, N.Y.

Vancocin for I. V. Injection

Description: Each rubber-stoppered ampoule contains 500 mg. Vancocin (vancomycin) as the hydrochloride in the form of powder to be dissolved in 10 cc. of water.

Indications: In patients seriously ill with infections caused by Gram-positive organisms, particularly staphylococci and enterococci resistant to other antibiotics. Do not use in patients with reduced renal function unless absolutely necessary.

Administration: By i.v. infusion, 500 mg. every 6 hrs., or 1 Gm. every 12 hrs., or 2 Gm. daily by continuous infusion; children, 20 mg. daily per lb. of body weight.

Form Supplied: 10-cc. (500-mg.) ampoules. After dilution store in refrigerator.

Source: Eli Lilly and Co., Indianapolis 6, Ind.

Other New Products

Chemicals, clinical trial drugs, diagnostic aids, equipment for the retail and hospital pharmacy

Amber Plastic Vials

Light-protective amber plastic vials have been marketed by *Armstrong Cork Co.* in 3, 5, 7, 10, 12, and 14-dram sizes. They have white opaque polyethylene snap caps.

Atratan Tablets

Oral sustained-release tablets containing, in each, 1 mg. atropine tannate are marketed by *Irwin, Neisler & Co.* for the relief of symptoms of ureteral colic.

Bronkodyl Pediatab

A pediatric strength of *Columbus Pharmacal's* Bronkodyl contains in each lime tablet coating (sublingual): isoproterenol HCl, 5 mg.; and in each core (swallowed): phenylpropanolamine HCl, 15 mg., and glyceryl guaiacolate, 60 mg. Supplied in bottles of 100 and 500 tablets.

Cardrase Tablets 62.5 mg.

The *Upjohn Company* has marketed its diuretic Cardrase (ethoxzolamide) as 62.5-mg. tablets in bottles of 100. The 125-mg. tablets also are available.

Celginase Tablets and Granules

Mead Johnson has marketed a combination of dioctyl sodium sulfosuccinate (Colace) with calcium and sodium alginates as an anticonstipant in tablet and granule forms. Supplied: tablets, in bottles of 30, 60, and (for hospitals) 250; granules, in tins of 147 Gm. and 294 Gm.

Compazine Spansule Capsules 75 mg.

Smith Kline & French Labs. has added a 75-mg. Spansule capsule of Compazine (prochlorperazine), as the dimaleate, to its line of Compazine dosage forms. The 75-mg. strength is primarily for use in mental hospitals in the treatment of severe mental and emotional conditions. Supplied in bottles of 30 and a hospital package of 1,500 capsules. Retail pharmacists are urged not to stock the new strength Spansule unless they have been receiving prescriptions for 25-mg. Compazine tablets.

Cosa-Signemycin for Oral Suspension
Cosa-Signemycin for Pediatric Drops

Pfizer Laboratories has marketed 60-cc. bottles of 1.5 Gm. Cosa-Signemycin (combination of glucosamine + tetracycline HCl equivalent to 1 Gm. tetracycline HCl and triacetyloleandomycin 0.5 Gm.) to make an oral raspberry flavored suspension containing 125 mg. per 5 cc. Bottles of 200 mg. Cosa-Signemycin to make 10 cc. of solution for use as pediatric drops and containing 100 mg. in each 5 cc. are available with dropper to deliver 5 mg. per drop.

All actively promoted items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information before products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Editor, New Prescription Products Department, JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Curon Elastic Bandages

Light-weight, porous bandages which can be used as pressure dressings are available from the surgical products division of *American Cyanamid Co.* The material was developed by the Curon Division of Curtiss-Wright Corp.

Depo-ACTH Mix-O-Vials

Packages containing ACTH in a dry, stable form in 1 compartment with a gelatin diluent in the upper compartment, are marketed by *Upjohn Co.* Depo-ACTH (40 u./cc.) and Depo-ACTH 80 (80 u./cc.) are supplied in 5-cc. Mix-O-Vials. Depo-ACTH (40 u.) is available also in 1-cc. Mix-O-Vials. No refrigeration is required before mixing.

Dialose Plus Capsules

The *Stuart Company* has marketed capsules containing di(acetylhydroxyphenyl)isatin, dioctyl sodium sulfosuccinate, and carboxymethylcellulose for use as a laxative. Supplied in bottles of 100 and 1,000 capsules.

Dimetane Expectorant
Dimetane Expectorant-DC

A pale pink liquid (Dimetane expectorant) containing, in each 5 cc.: parabromdylamine maleate (Dimetane), 2 mg.; glyceryl guaiacolate, 100 mg.; phenylephrine HCl, 5 mg.; and phenylpropanolamine HCl, 5 mg.; in an aromatic base with alcohol 3.5%, is marketed by *A. H. Robins Co.*, for relief of coughing and for antihistamine effect. Dimetane expectorant-DC is a dark red liquid containing, in each 5 cc., dihydrocodeinone bitartrate 1.8 mg. in addition to the above formula for cough depressant action. Dosage for either is 1–2 teaspoonfuls 4 times daily; children, half the dosage. Use with caution in patients with cardiac and peripheral vascular disease, and hyperthyroidism. Both are supplied in pints and gallons. The DC form is an exempt narcotic.

Duografin I.V. Contrast Media

Duografin is marketed by *E. R. Squibb & Sons* as an i.v. contrast media for simultaneous visualization of the renal and biliary tracts. It is rapidly excreted from the liver and the kidneys. Supplied in 50-cc. vials.

Equanil Suspension

A fruit-flavored suspension containing, in each 5 cc., 200 mg. Equanil (meprobamate) is marketed by *Wyeth Labs.* Dosage is 2 teaspoonfuls 3–4 times daily; children 3 yrs. and older, 0.5–1 teaspoonful 2–3 times daily. Supplied in 4-oz. bottles.

Gastrex

Paul Maney Labs. has marketed a combination of gastric mucin, 2 gr.; aluminum hydroxide gel, 4 gr.; magnesium trisilicate, 6 gr.; and homatropine methylbromide, 1/300 gr., for use as a prescribed gastric antacid. Supplied in bottles of 100 and 1,000.

Guaiagesic Suspension

A chocolate-flavored suspension containing, in each 5-cc. teaspoonful: phenylephrine HCl, 5 mg.; pyrilamine maleate, 6.25 mg.; glyceryl guaiacolate, 50 mg.; salicylamide, 60 mg.; and acetaminophen, 60 mg., is marketed by *Columbus Pharmacal* for symptomatic relief of colds. Dosage: infants, 0.25–0.5 teaspoonful; children 1-4 yrs., 0.5–1 teaspoonful; 4–6 yrs.; 1–2 teaspoonfuls; over 6 yrs., 2 teaspoonfuls, given every 4–6 hrs. Supplied in 3-oz. and pint bottles.

Halotestin Tablets 10 mg.

The *Upjohn Company* has marketed its halogenated oral androgen Halotestin (fluoxymesterone) in 10-mg. tablets in addition to the 2-mg. and 5-mg. strengths. Dosage is 2–10 mg. daily, singly or in divided doses. Supplied in bottles of 50 tablets.

HydroDiuril for Clinical Trials

Hydrochlorothiazide (HydroDiuril), a more potent oral diuretic than chlorothiazide (Diuril), has been made available for clinical studies by *Merck Sharp & Dohme* Research Labs. Limited clinical observations indicate the new drug has the same biological effects and indications for therapy as chlorothiazide, to which 2 hydrogen atoms were added at the N=C bond to produce hydrochlorothiazide.

Lipo-Sulfaloid Suspension

A flavored vegetable oil emulsion containing, in each 5 cc., 167 mg. each of sulfamethazine, sulfadiazine, and sulfamerazine, with sodium benzoate 0.1% is marketed by *Lloyd, Dabney & Westerfield.* Dosage initially 2–4 tablespoonfuls, then half the dose every 12 hrs.; children, 1 teaspoonful per 10 lbs. body weight then half the dose every 12 hrs. Supplied in pint and gallon bottles.

Coming

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Lyteca Syrup

A flavored syrup containing 120 mg. N-acetyl-*p*-aminophenol (acetaminophen) in each 5 cc. is marketed by *Lloyd, Dabney & Westerfield* for use as an antipyretic and analgesic. Dosage in teaspoonfuls every 4 hrs.; infants, 0.5; children 1–4 yrs., 0.5–1; 4–8 yrs., 1–2; 8–12 yrs., 2; over 12 yrs., 3. Supplied in pint and gallon bottles.

Martussin Special-MRT Suspension

A milk chocolate colored and flavored suspension containing, in each 5 cc.: terpin hydrate (microcrystalline), 200 mg.; caffeine, 50 mg.; ammonium salicylate, 200 mg.; ammonium gluconate, 50 mg.; glycine, 100 mg.; with benzalkonium chloride 0.05% in a mentholated sorbitol base, is marketed by *Marvin R. Thompson, Inc.*, as a cough preparation especially for diabetic or hypertensive individuals. Dosage, 5 cc. every 2–4 hrs.; less for children. Supplied in 4-oz. and pint bottles.

Mestinon Timespan Tablets

Roche Laboratories has marketed Mestinon (pyridostigmin) bromide in sustained-release tablets containing 180 mg. of the drug in each scored, capsule-shaped tablet. Dosage for control of symptoms of myasthenia gravis, 0.5–3 Timespan tablets once or twice daily. At least 6 hrs. should elapse between doses. Supplied in bottles of 100 and 1,000.

Ophthocort Ophthalmic Ointment

An ointment containing, in each Gm.: Chloromycetin (chloramphenicol), 10 mg. (1%); hydrocortisone acetate, 5 mg.; and polymyxin B sulfate, 5,000 u., in a petrolatum base, is marketed by *Parke, Davis* for treatment of ocular inflammation. Dosage, local application 2–4 times daily. Supplied in 1/8-oz. tubes. The new ointment replaces P., D.'s Chloromycetin-hydrocortisone ophthalmic ointment.

Penmycin-A S Suspension

A suspension containing, in each 2 cc.: procaine penicillin G, 400,000 u., and dihydrostreptomycin, 0.5 Gm., is marketed by *Phila. Ampoule Labs.* for i.m. injection. Supplied in 10-cc. multiple-dose vials.

Pen-Vee K Liquid

Wyeth Laboratories has marketed dry powder forms of penicillin V (Pen-Vee) potassium which when diluted to 40 cc.

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with special diluent or with water yield, respectively: a golden, peach-flavored liquid containing 250 mg. (400,000 u.)/5 cc.; a raspberry colored and flavored liquid containing 125 mg./5 cc. Twice the amount of the powder yielding the raspberry liquid is available in a larger bottle for mixing with 80 cc. of water. For oral use in common infections and prophylaxis. Dosage, 125–250 mg. 3 times daily. Supplied: 40-cc. (2-Gm.) bottle with bottle of diluent; 40-cc. (1-Gm.) and 80-cc. (2-Gm.) bottles.

Sinutab Tablets

Scored tablets containing, in each: acetaminophen, 150 mg.; acetophenetidin, 150 mg.; phenylpropanolamine HCl, 25 mg.; and phenyltoloxamine dihydrogen citrate, 22 mg., are marketed by *Warner-Chilcott* for prophylaxis and treatment of sinus headache. Dosage, 2 tablets at first sign of headache then 1 every 4 hrs.; not to exceed 6 tablets in 24 hrs. Children (6–12 yrs.), half dosage. Supplied in bottles of 30 tablets.

Sultrin Vaginal Tablets

Water-dispersible vaginal tablets containing, in each: sulfathiazole, 171 mg.; sulfacetamide, 143 mg.; N^1-benzoylsulfanilamide, 185 mg.; and urea, 13 mg., are marketed by *Ortho Pharm. Co.* for antibacterial use in vaginitis and cervicitis. Dosage, 1 tablet intravaginally twice daily for 10 days; repeated if necessary. Supplied in package of 20 tablets with inserter.

Sumycin Syrup
Sumycin Aqueous Drops

Aqueous syrup and drops of Sumycin (tetracycline phosphate complex) are fruit-flavored suspensions marketed by *E. R. Squibb & Sons.* Supplied : syrup in 60-cc. bottles; aqueous drops in 10-cc. bottles with graduated (25 and 50 mg.) dropper.

Teles Suspension

A white, odorless suspension containing 2.5% tellurium dioxide, sulfated to pH 5.5, in a detergent shampoo base is marketed by *Torch Labs.* for use in treatment of seborrheic dermatitis. Used twice weekly for 2 weeks then once weekly. Supplied in 4-oz bottles.

Tridenol for Bath

A solution of olive oil in the nonionic surfactant 8-phenoxyethanol is marketed by *Spirt & Co.* to be added to the bath to relieve dryness, itching, and scaliness in dermatitis conditions. Add 2–3 capfuls to bath; for infant bath add 1 capful. Supplied in 8-oz. plastic bottles.

Triquin Tablets

Tablets containing in each: Atabrine (quinacrine) HCl, 25 mg.; Aralen (chloroquine) phosphate, 65 mg.; and Plaquenil (hydroxychloroquine) sulfate 50 mg., are marketed by *Winthrop Labs.* for use in treatment of light-sensitivity skin eruptions. Dosage: in lupus erythematosus (especially chronic discoid type), initially 1–2 tablets 4 times daily after meals and before retiring, with improvement reduce gradually to 1–2 tablets daily; in polymorphic light-sensitivity eruptions and solar urticaria, initially 1 tablet after breakfast and lunch, continue until full response is obtained or for several weeks then reduce to 1 tablet daily for maintenance dose. Supplied in bottles of 100.

Vagi-Plex Cream

A vaginal cream containing, in each Gm.: 0.05 mg. hexestrol with 1.25% each of sulfacetamide, sulfadiazine, sulfamerazine, and sulfamethazine, in a water-dispersible, acid pH base, is marketed by *Rowell Labs.* for use in the treatment of senile and atrophic vaginitis, nonspecific vaginitis and cervicitis, before and after some operative conditions, in hypoestrogenic induced conditions, and in mixed bacterial vaginal infections. Dosage, 1 applicatorful twice daily reduced to once daily after 1 week if improved. Indiscriminate use may be dangerous. Contraindicated in patients sensitive to sulfa or with cancer or potential precarcinomatous lesions of the vagina or vulva. Supplied in 3-oz. tube with or without applicator.

V-Cillin K Sulfa Tablets

Scored tablets (Diskets) containing in each: penicillin V potassium (V-Cillin K) equivalent to 125 mg. (200,000 u.) penicillin V, and 167 mg. each of sulfadiazine, sulfamerazine, and sulfamethazine, are marketed by *Eli Lilly* for use in the prophylaxis and treatment of mixed infections of the respiratory, gastrointestinal, and urinary tracts. Dosage, 1–2 tablets 4 times daily (based on sulfonamide content). Supplied in bottles of 50.

Vio-Cort Ointment

A topical ointment containing, in each Gm.: hydrocortamate HCl, 5 mg., and neomycin sulfate, 5 mg., in a petrolatum base, is marketed by *Rowell Labs.* for use as an anti-inflammatory and anti-infective agent. Applied gently to the affected area 2–4 times daily. If prompt relief is not obtained within 24–48 hours., other treatment is indicated. This is not for ophthalmic use. Supplied in 5-Gm. tubes.

Vioform-Hydrocortisone Ointment

Ciba's dermatologic combination of Vioform (iodochlorhydroxyquin) 3% and hydrocortisone 1% is available in ointment form in 5-Gm. and 20-Gm. tubes. The cream and lotion also are available.

Virac Solution

Ruson Laboratories has marketed a complex of iodine and the quaternary ammonium compound N-methylheptylcolaminoformylmethyl pyridinium chloride (undecoylium chloride; Ruson) as Virac (undecoylium chloride-iodine) in solutions containing either 3.2% or 1:500 of the complex. It is recommended by Ruson for use as a cleansing germicide in a wide range of infectious conditions, and as a surgical scrub and preoperative preparation. An irrigant solution also is available.

Viterra Pediatric Liquid

An orange-flavored mixture containing, in each 0.6 cc.: vitamins A, 5,000 u.; B_1, 1 mg.; B_2, 1 mg.; B_6, 1 mg.; B_{12}, 1 mcg.; C, 50 mg.; D, 1,000 u.; niacinamide, 10 mg.; and panthenol, 2 mg., is marketed as a pediatric nutrition supplement by *J. B. Roerig and Co.* The nitrogen pressurized metered-flow bottle delivers the daily dose of 0.6 cc. with each press of the plunger top. The liquid is given orally directly or in liquids. Supplied in 50-cc. bottles.

V-Kor Tablets

Elongated tablets (Diskets) containing, in each: penicillin V potassium equivalent to 62.5 mg. (100,000 u.), penicillin V; Pyronil (pyrrobutamine), 7.5 mg. (as naphthalene disulfonate); Histadyl (thenylpyramine), 12.5 mg. (as hydroxybenzoyl benzoate); Clopane (cyclopentamine) HCl, 6.25 mg.; aspirin, 114 mg.; phenacetin, 80 mg.; and caffeine, 16 mg., are marketed by *Eli Lilly* for relief of local and systemic symptoms of respiratory infections and to prevent or abort secondary bacterial complications. Dosage, 2 tablets every 6–8 hrs. Supplied in bottles of 50.

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